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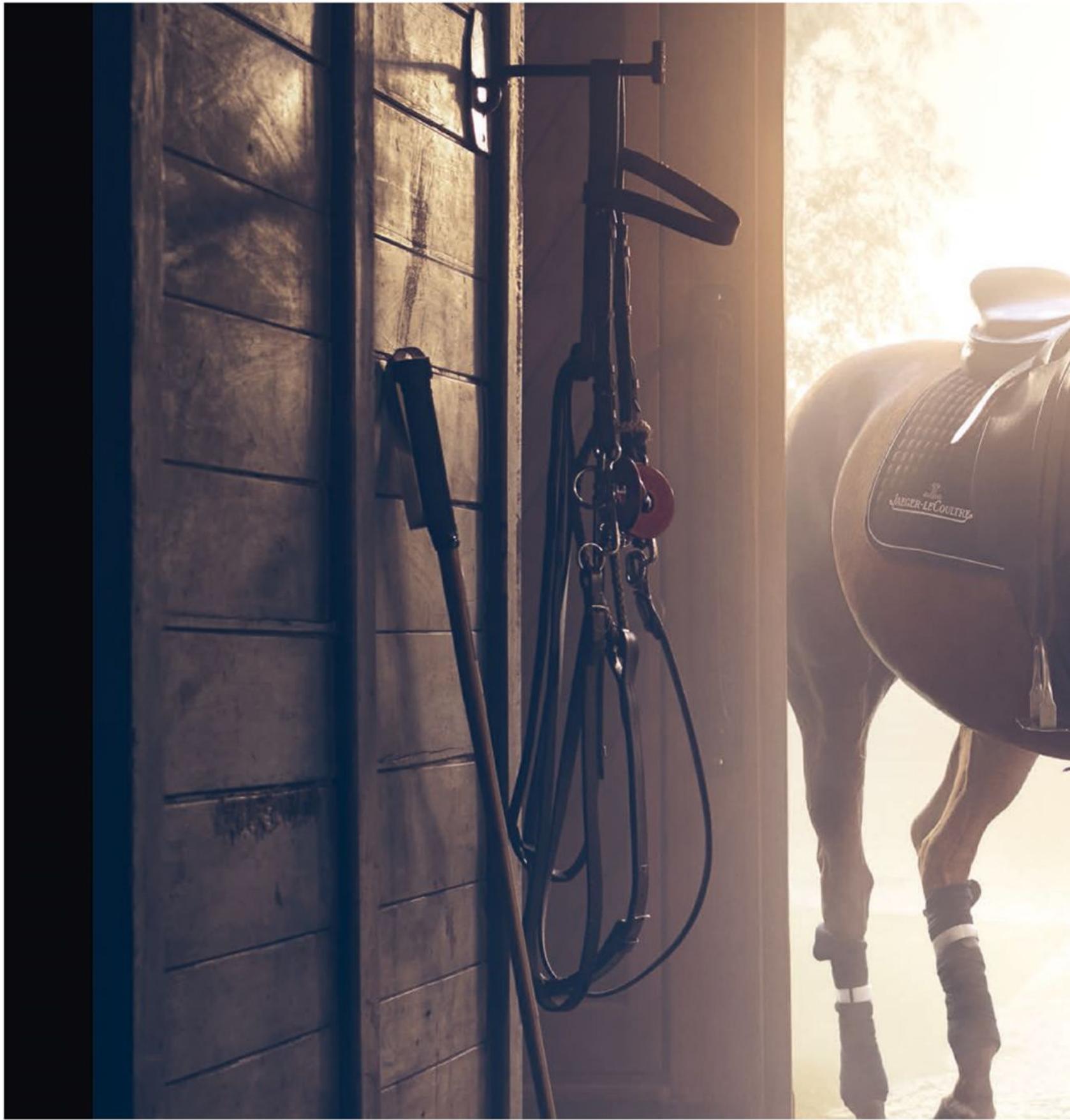
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# Phil's Choice

**O**ur cover story this month is a change of pace for us. Instead of a Rolex sports watch, we test a Rolex dress watch, the Cellini Time, one of three redesigned Cellini watches Rolex introduced last year.

I confess to having some sympathy for the Cellini. In a Rolex family dominated by Oysters (there are 20 of them presented on Rolex's website), Cellini is an overlooked outlier. It barely merits a mention in James M. Dowling's and Jeffrey P. Hess's authoritative, 392-page history of Rolex, *Rolex Wristwatches: An Unauthorized History*, published in 1996. The authors refer to the Cellini briefly, noting that "the Rolex dress watch has continued to this day but still remains very much in the shadow of the Oyster Perpetual."

Cellini, alas, is an aesthete in a family of athletes, the odd man out among all those showoff Oysters. "Hey, Cellini, we're diving down to the Marianas Trench today. Wanna come?"

"Thanks, Oysters, but there's a really important Frida Kahlo exhibition downtown ...."

No, being the artsy, manual-wound Rolex Cellini is not easy. Last year, though, Rolex showed the Cellini some love, as Jens Koch explains in "Cellini Goes Automatic" on page 54. The big change is that the Cellini got something that Oysters have had since the 1930s: an automatic movement. Koch is surprised that Rolex put the automatic movement it uses in the Explorer – Caliber 3132, with Paraflex shock absorbers – in the new Cellini Time. "Superior shock resistance is perhaps not necessary with a dress watch, but it can't hurt," Koch writes.

Phil Mickelson wearing his Rolex Cellini

Reading that, I thought, "You got that right. You never know when some lunatic is going to strap on a Cellini and go whack golf balls with it." Like my friend, Phil.

I met Phil in June 2006 at a dinner party Rolex threw for its retailers and the press at the Winged Foot Golf Club in Mamaroneck, N.Y., three days before the start of the U.S. Open there. At the cocktail reception before dinner, a sunny-faced tall guy in a navy blue suit, white shirt and yellow tie approached

me, stuck out his hand and said, "Hi, I'm Phil." I laughed and said, "I know." It was Phil Mickelson, golf giant, and a Rolex "ambassador." He was alone: no handlers, no entourage, just Phil.

Suddenly I had a chance to ask him something I had always been curious about: why he wears a watch when he plays and so few other golfers do. He said that most golfers don't like the feel of a watch on their wrists when they swing the club. They want their wrists unencumbered. But he said he likes to use his watch during a tournament. He's worn one for his entire career. It fits snugly on his wrist, is comfortable and doesn't interfere at all with his swing. "It's a Cellini," he told me.

We chatted for a few minutes and then he continued his ambassadorial duties meeting other guests. (But forever more, he's "my friend Phil.")

**CELLINI IS AN AESTHETE IN  
A FAMILY OF ATHLETES, THE  
ODD MAN OUT AMONG ALL  
THOSE SHOWOFF OYSTERS.**

On a side note, if you follow golf, you know that my friend Phil played marvelously at that Open – until the last three holes. He bogeyed 16, but was still tied for the lead. On the final hole, all he had to do to win another major tournament was make par. It didn't happen. What did happen has been described as "one of the wildest finishes in U.S. Open history." Phil drove his tee shot onto the roof of a hospitality tent. Then he hit a tree. He double-bogeyed the hole and lost by a stroke. Afterward he said, "I just can't believe that I did that. I am such an idiot." In victory or defeat, you gotta love Phil.

Mickelson teaches us an important watch lesson. Be careful about stereotypes. Any Oyster lover tempted to kick sand in Cellini's face because it is a "dress" watch should think twice. My friend Phil has been knocking the bejesus out of a manual-wind Cellini on golf courses for two decades and it works just fine, even without Paraflex shock absorbers. You can take your Explorer up Everest. Phil's sticking with his Cellini.

Joe Thompson  
Editor-in-Chief



## Breguet, the innovator. Invention of the shock-protection device, 1790

Inspired by "subscription watches", the Tradition 7027BR model daringly symbolizes the Breguet art of watchmaking through a subtle play on transparency effects and an eminent contemporary architectural design. It highlights one of Breguet's most important inventions, the *pare-chute*, designed to protect the balance pivots in case of impact, it was the forerunner of all modern shock-absorbing devices. History is still being written...



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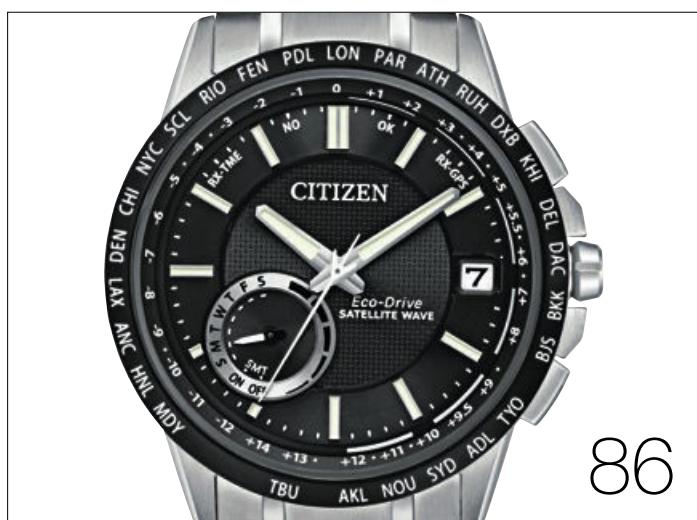
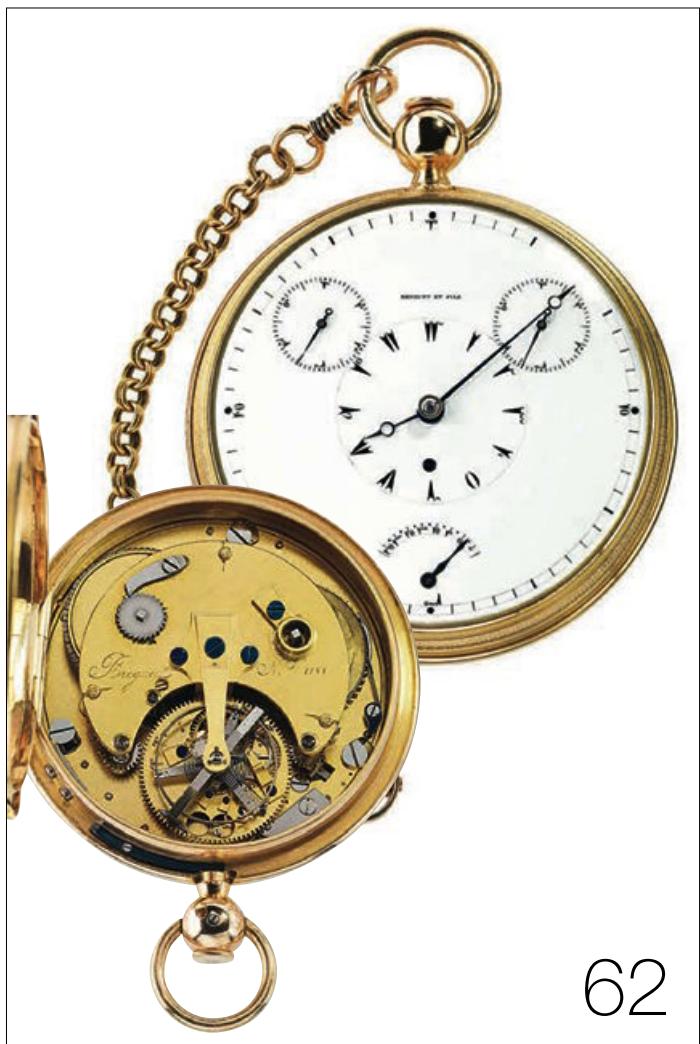
*By Jens Koch* | We take the Sinn U2 S dive watch deep into the craggy darkness of a water cave. Does it come out alive?

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**ON THE COVER:** *The Rolex Cellini Time. Photo by Nik Schölzel*

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## THE WATCHTIME Q&A:

### OMEGA CEO STEPHEN URQUHART

Omega is having a big year in 2015, with the launch of the Master Chronometer-certified Globemaster, the expansion of the Speedmaster Moonwatch line, and the release of another limited-edition James Bond timepiece. We sat down with Omega CEO Stephen Urquhart to get his insights into these and other new Omega watches for 2015.



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**10 UNIQUE WATCHES ON THE BLOCK AT ONLY WATCH 2015**  
November marks the sixth edition of Only Watch, a charity auction of unique timepieces whose proceeds benefit the Monaco Association against Duchenne Muscular Dystrophy. We show you 10 watches that will go on the block, including a Breguet, a Blancpain, a Ulysse Nardin and a Vacheron Constantin.



## BORROWED TIME: TISSOT PRS

### 516 AT THE BRICKYARD 400

The new Tissot PRS 516 Automatic hits U.S. stores in the fall, but we had the opportunity to review this auto-racing-inspired chronograph this summer in its natural habitat: at the Indianapolis Motor Speedway during the running of one of the biggest NASCAR races of the year.



## GRAND SEIKO'S 55TH ANNIVERSARY SPRING DRIVE CHRONO

Seiko released its first Grand Seiko wristwatch in 1960. This year, to commemorate the collection's 55th anniversary, Seiko has introduced a new limited-edition Grand Seiko, equipped with its proprietary Spring Drive chronograph movement.



## WATCH TO WATCH: BREITLING FOR BENTLEY B06 S

As it does most years, Breitling added to its automotive-influenced Breitling for Bentley collection at this year's Baselworld. The new Breitling for Bentley B06 S is a more compact version of its 49-mm predecessor, equipped with Breitling's "30-second chronograph" system.

## AFFORDABLE ORIS: FIVE ORIS WATCHES UNDER \$2,500

Oris has developed a reputation as a purveyor of very reasonably priced timepieces in a variety of styles, all with Swiss-made mechanical movements. Here are five of the company's most affordable watches, all priced below \$2,500 (most under \$2,000).



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## 'MOST WATCH MANUFACTURERS HAVE RAISED THEIR PRICES IN THE LAST FEW YEARS FOR NO REASON. I CALL IT ABUSIVE!'

### IF IT AIN'T BROKE ...

The big lettering on page 26 [in the Readers' Forum] of the August 2015 issue of WatchTime caught my attention.

I'm a former commercial diver, and as such I have owned two Rolex Sea-Dwellers back to back – neither ever failed. The fellow was asking why they did not change the shock absorber in the current model. Well, as you said, "Rolex does what Rolex wants" in your response. My time as a diver tells me that Rolex is very cautious about making changes – when it comes to performance, years of use of the 3135 movement under brutal conditions is going to cause Rolex to take careful baby steps in [altering] the movement of this watch. I have been at work in the water hammering away with a 20-pound sledge hammer and wearing my Sea-Dweller, among other "shock"-inducing jobs – the watch is made for the working diver, not the desk diver, so please take that into consideration. The "latest and greatest" might look good on computer simulations, but 46 years of offshore commercial diving use is proof something works.

T. Kite  
New York, NY

### ENOUGH ALREADY!

I would like to bring to your attention the price of watches these days. I have been a watch collector since the early '80s. Back then I could buy an Omega Seamaster for \$1,500 to \$2,000; now you have to pay \$3,500 or more. Same thing with the other brands. Most watch manufacturers have raised their prices in the last few years for no reason! I call it abusive! A Breitling, Omega, IWC or others selling for \$5,000 to \$8,000 is not fair!

I will have to find a new hobby!

Mario Boisvert  
QC, Canada

### PRICE-CONSCIOUS

I am a recent subscriber. I enjoy your magazine and am learning a lot. I particularly like that you include advertisements about and refer-

ences to moderately priced watches. (I refer in particular to a letter in your February 2015 issue that mentions a Seiko 5 watch priced under \$100.) And you include prices. I subscribe to WatchTime to learn about watches; I have no idea what watches cost or should cost.

I hope you can consider including a pronunciation guide for some of the watch brands and a glossary, and maybe articles about watch terms, such as "tourbillon" and "chronograph." Certainly, I can and have looked these terms up, but I think WatchTime, as a leader in watch education, would do a better and more definitive job at this. I have confidence that WatchTime would get those terms right. Also, maybe some articles or advertisements on pocketwatches?

Robert Schnelle  
Coulee City, WA

*You will find both a pronunciation guide for watch brand names and a glossary at [watchtime.com](http://watchtime.com). On the home page, click on "WATCHES" and then scroll down to "WATCH PRONUNCIATION" and, further down, "WATCH TERM GLOSSARY." Unfortunately, we can't help on the pocketwatch front, as we have our hands full covering new wristwatches. JT*

### ECSTATIC ABOUT SEIKO

I am a longtime fan of your magazine. I have enjoyed your articles on high-end watches like Piaget and Rolex. I've noticed in past magazines articles on more affordable watches like Bulova and Citizen but never Seiko. Needless to say, I was ecstatic to read all about the Seiko Watch Corp. in the April issue ["Seiko Milestones"].

Henry Fair  
Coquitlam, BC, Canada

*We have written quite a bit about Seiko over the years, as a search of the WatchTime archive at [watchtime.com](http://watchtime.com) will show. It's true that lately our coverage has focused on more expensive models like Grand Seikos and the Seiko Astron. JT*

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# COSC 2014: Slight Gain, New Number Three

*Total COSC certificates rose last year by less than 1 percent. But Tissot's certs more than doubled, helping push it to number three in the brand rankings.*

The number of chronometer certificates issued last year by COSC, Switzerland's official chronometer-testing agency, was up slightly from 2013. There were a total of 1,701,868, an increase of less than 1 percent from the 1,688,441 of the year before. As always, the vast majority, 1,685,685, went to mechanical movements. Quartz movements received 16,183 certificates. COSC (Contrôle Officiel Suisse des Chronomètres) certified 94 percent of the movements submitted to it for testing. WatchTime obtained the COSC figures from the Federation of the Swiss Watch Industry.

Rolex and Omega retained their traditional first and second spots with 781,336 and 476,898 certificates, respectively. The figure for Rolex was down 3 percent from the prior year; for Omega it rose 7 percent. (Omega had a 15-percent decline in 2013.) Rolex and Omega together received 74 percent of COSC certificates.

There was one notable change in the brand rankings: the perennial number three, Breitling, which had 117,133 certs, sank to the fourth spot. In its place was Tissot, number five in 2013, which leapfrogged over Breitling and Mido, both of which had sizable decreases. Tissot more than doubled its number of certs, to 130,848. In recent years the brand has been going great guns on the chronometer front: in 2010, it received just 1,265 certs. By 2012, the number had grown to nearly 50,000. Its figure for 2013, 62,830, represented a 27-percent rise from 2012.

*Rolex: a 3-percent decrease in certs last year*



*Omega: a gain of 7 percent*

1.



*Tissot unseated Breitling to take the number-three spot.*

3.



Breitling, on the other hand, received 25 percent fewer certificates than in 2013. All of the decrease was due to its receiving fewer quartz-movement certificates: 53,500 in 2013 versus 10,730 last year. Breitling has long been the biggest recipient by far of quartz-movement certificates. Its mechanical-movement certs were a dif-

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2. Omega	476,898
3. Tissot	130,848
4. Breitling	117,133
5. Mido	43,574
6. Enicar	27,603
7. Chopard	21,268
8. Ernest Borel	17,604
9. Officine Panerai	12,640
10. Ulysse Nardin	10,439
11. Titoni	10,432
12. TAG Heuer	7,340
13. Bremont	6,668
14. Ball Watch	6,313
15. Invicta	4,956
16. Chanel	4,815
17. Ralph Lauren	4,191
18. Tudor	2,508
19. Carl F. Bucherer	2,207
20. Roamer	1,975
21. Certina	1,451
22. Christopher Ward	1,293
23. Zenith	1,157

Source: COSC/FH

ferent matter; they increased by 4 percent last year, to 106,403.

Mido, which dropped to number five in the rankings, had a decrease of 40 percent, to 43,574 certificates.

The data showed a few other notable differences from 2013. Enicar's number of certificates nearly doubled, to 27,603 from 15,845. Ernest Borel also showed a big increase, to 17,604 from 9,996. And TAG Heuer received more than twice as many certs as last year: 7,340 versus 3,464. Chanel rose to 4,815 from 1,935; Ralph Lauren to 4,191 from 2,762 and Carl F. Bucherer to 2,207 from 1,377. Tudor received its very first COSC certificates: 2,508 of them. And Zenith's number of certs rose to 1,157 from 191 in 2013.

Large decreases were shown by Panerai, which dropped by almost half, to 12,640 from 21,658; Titoni, 10,432 versus 16,669; and Ball Watch, whose certificates fell to 6,313 from 9,739.

There were 23 brands that received more than 1,000 certificates, down from 26 in 2013.

## Swiss Exports Flat But U.S. Gains

For the first six months of 2015, Swiss watch exports were nearly equal to those of last year's first half. They rose 0.4 percent to reach 10.6 billion Swiss francs (\$11 billion), according to the Federation of the Swiss Watch Industry (FH).

Although the total showed little change, there were some big shifts in exports to particular markets. Those to Asia fell 5.5 percent, due in large part to a 19.5-percent decline for Hong Kong, the world's biggest market for Swiss watch exports, and a 6.9-percent decline for Japan. By contrast, Swiss watch exports to Europe rose 9.8 percent, thanks mostly to big increases to Italy (14.2 percent), France (8.3 percent), the U.K. (28.5 percent) and Spain (8.0 percent).

Exports to the U.S., the second biggest market, grew 4.2 percent. Even though it isn't one of the fastest growing markets, the U.S. has of late been a reliable one, the FH points out. "[It] has certainly been one of the most consistent markets over the past two years," the FH said in a statement.

The FH data shows a slowdown over the six-month period: exports increased 3.2 percent in the first quarter but in the second quarter declined by 2.2 percent. The FH nonetheless predicts that the year as a whole will be roughly flat with last year. "Forecasts still indicate stability for 2015 as a whole, provided there are no significant changes to the [economic] environment," the FH said.

The strength of the Swiss franc took its toll on Swiss watch exports, pushing some companies that would have posted gains for the period into negative territory. Suppliers to Swiss watch companies and the companies themselves are both feeling the impact of the powerful franc, according to the FH.

Less expensive watches did better than higher-price ones. Those with an export price of less than SF200 (\$208) rose 6.5 percent in volume terms. Watches with export prices between SF200 and SF3,000 declined 3.9 percent in value and 3.2 percent in volume. Watches priced at more than SF3,000 were up 0.8 percent in value terms.

## SWITZERLAND'S TOP 15 MARKETS

Swiss Watch Exports for January - June '15  
(SF millions)

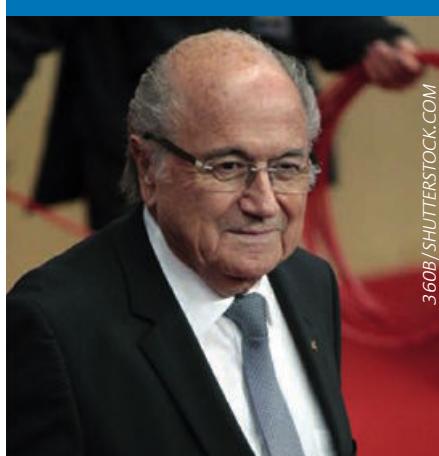
COUNTRY	VALUE	% CHANGE
1. Hong Kong	1,615.9	-19.5
2. U.S.	1,158.0	+4.2
3. China	684.6	+5.3
4. Italy	671.9	+14.2
5. Japan	612.1	-6.9
6. Germany	587.0	+1.4
7. France	575.3	+8.3
8. U.K.	559.9	+28.5
9. Singapore	557.5	+8.1
10. U.A.E.	478.9	-8.1
11. South Korea	344.3	+17.6
12. Spain	232.7	+8.0
13. Taiwan	221.3	+3.8
14. Saudi Arabia	195.2	+6.3
15. Thailand	145.9	+22.1

Source: FH

## Q&amp;A

*Sepp Blatter, the disgraced, lame-duck president of FIFA, used to work in the watch industry. What did he do?*

In the early 1970s, he worked for Longines as head of public relations and in its Olympic timekeeping department. He moved to FIFA as technical director in 1975.



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# RAYMOND WEIL

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# Strong Franc Hurts Swatch Group Profit

The strong Swiss franc is hurting profits at the Swatch Group, as it is at other Swiss companies. For the first half of 2015, the Swatch Group's net income dropped 19.4 percent, to 548 million Swiss francs (\$570 million).

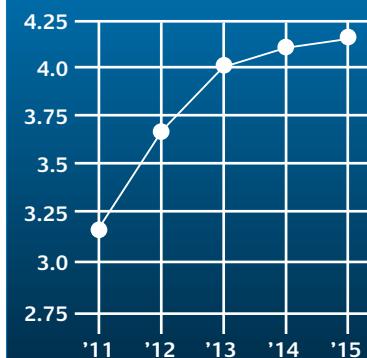
Despite the franc, which the company described in a statement as "massively overvalued," the group posted an increase in net sales of 2.2 percent, bringing them to SF4.192 billion (\$4.360 billion). At constant exchange rates, net sales were up 3.6 percent. The rise of the Swiss franc therefore meant a reduction in reported

*Swatch Group says there was "explosive" demand for Tissot's T-Touch Expert Solar.*



## SWATCH GROUP SALES

January - June (SF billions)



Source: Swatch Group

sales of SF56 million (\$58.2 million). In a statement, the company pointed out that its sales growth exceeded that of the Swiss watch industry in general. According to the Federation of the Swiss Watch Industry, Swiss watch exports rose just 0.4 percent in the first half (see prior item on Swiss watch exports).

Sales of watches, jewelry and components (including movements) rose 2 percent (3.4 percent at constant exchange rates). Electronic systems' net sales grew 7.6 percent to SF156 (\$162.2 million).

The company noted that several recent watch introductions had pushed sales up. They included the Omega Co-Axial Globemaster, the Omega Speedmaster 57 Vintage Dial and the Swatch Sistem51. Tissot's T-Touch Expert Solar generated "explosive demand," which resulted in "significant supply bottlenecks for the brand," the Swatch Group statement said. "The necessary adjustments in production have been made in order to shorten significantly waiting times in the second half of the year," the company said.

The company created 400 new jobs during the six months, 100 of them in Switzer-



*The company expects strong sales from its new James Bond Seamaster Aqua Terra.*

land. Of the new jobs outside the country, most were in Swatch Group brand stores, which, the company said, experienced very good growth during the period.

The Swatch Group expects strong results in the second half despite the problems being caused by the Swiss franc. The company said sales will be helped by the launch of a new James Bond watch by Omega, the introductions of the Omega Master Co-Axial with METAS certification, the Swatch Touch Zero One and the Swatch NFC (Near Field Communication) watch. Increased manufacturing capacity for the T-Touch Expert Solar will also spur sales, the company said.



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# Rolling Out The Barrels



*The Oak & Oscar Burnham watch*



*Chase Fancher*

Some watch lovers get the bug so bad they can no longer sit on the sidelines. Among them is Chase Fancher, a Chicago-based commercial-real-estate consultant. He has launched his own watch brand, Oak & Oscar, made with Swiss movements and assembled by Lum-Tec, a maker of luminous-dial watches in Mentor, Ohio.

The first Oak & Oscar model, a limited edition of 300 pieces being introduced this fall, is the Burnham. Fancher named the watch for the famed Chicago architect and urban planner Daniel Burnham, of whom Fancher's father is a great admirer. The brand's name also has a personal meaning for Fancher: "oak" refers to his love of bourbon, which is aged in oak barrels (the logo on the dial and the seconds-hand counter-weight are barrel-shaped). "Oscar" is his dog's name.

The Burnham is powered by the Soprod A1 automatic fitted with a cus-

tomized rotor. The case is steel and 42 mm in diameter although, Fancher says, it "wears" more like a 40- or 41-mm watch thanks to its curved lugs and the design of the flange inside of the bezel. The caseback is sapphire.

The watch has a sandwich dial that was manufactured specially for Oak & Oscar. The numerals and hour and minutes hands are coated with Super-Lumi-Nova BGW9.

The strap is made of leather from the Horween Leather Co. The watch also comes with a heavy, navy-colored nylon strap with orange stitching. A watch wallet made of Horween leather and felt, and big enough to hold four watches, an extra strap and a strap-changing tool, is included with each purchase. The watch is available at [oak&oscar.com](http://oak&oscar.com). The price is \$1,650. Part of the proceeds will be donated to One Tail at a Time, a dog-rescue organization in Chicago.

## Coming Next Spring ...

Next year an exhibit at the Museum of Arts and Design in Midtown Manhattan will highlight some of the most interesting, intricate fruits of the mechanical renaissance. The exhibit is called "Perfect Timing: 21st-Century Fine Watchmaking" and will run from May 3 to Sept. 25.

It will feature 45 mechanical watches made since 2000 by well-known brands including A. Lange & Söhne, Audemars Piguet, Breguet, Jaeger-LeCoultre, Patek Philippe, Ulysse Nardin and Vacheron Constantin, as well as lesser-known (at least to the public at large) independent brands like Christophe Claret, Greubel Forsey and HYT. It will also include drawings, photos, tools and watch components from a multi-year project called, "Timepiece: Birth of a Watch," in which the watchmaker Michel Boulanger makes a complicated watch under the guidance of watchmaking legends Philippe Dufour, Robert Greubel and Stephen Forsey. The purpose of the project is to ensure high-watchmaking skills continue to be passed down from generation to generation. Watch journalist and author Michael Clerizo is the exhibit's consulting curator.

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Jean-Claude Sabrier with Pierre Le Roy's Petite-Ronde watch

## Journe Buys Sabrier Library

Jean-Claude Sabrier, who died in November at age 76, was one of the world's preeminent horological experts: a renowned watch historian, author and watch-industry consultant. Watchmaker François-Paul Journe was his friend for nearly 40 years (Journe was 17 when the two first met). On June 15, Journe bought Sabrier's horological library, consisting of nearly 1,000 books, at an auction held in Paris by auction house Chayette & Cheval. The price was 760,000 Swiss francs (\$790,000). Journe will exhibit the books, which include manuscripts by the famed 18th- and early-19th-century watchmakers Ferdinand Berthoud, Pierre Le Roy and Antide Janvier, in his headquarters/factory in Geneva.

Sabrier, born into a family of jewelers in Normandy, France, was a consultant

to many museums, organizing exhibits and authoring or co-authoring catalogs for exhibitions on Berthoud, the Le Roy family, Abraham-Louis Breguet and others. Starting in 1980 he and Hervé Chayette, co-owner of Chayette & Cheval, organized some of the world's first specialized auctions on horology. Sabrier later became a director at the Antiquorum auction house and the principal author of the company's auction catalogs. He was then hired as a consultant to the Swatch Group, where he advised Chairman Nicolas Hayek Sr. on buying watches for the company's museums. In 2012, he wrote the book, *The Self-Winding Watch: 18th to 21st Century*. When he died, he and fellow watch expert Georges Rigot were working on a book about Breguet's *souscription* watch.

## Q&A

*Earlier this year, Barack Obama doffed the Jorg Gray chronograph he had worn throughout his presidency in favor of another watch. What is it?*

A Fitbit Surge. Obama was first spotted wearing the watch on March 17 by London's Daily Mail. The Fitbit Surge retails for \$250. Its functions include tracking your physical activity, measuring your pulse rate, monitoring your sleep and syncing with your smartphone. Obama told one reporter he might someday try an Apple watch, but hasn't yet been seen wearing one.



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## LVMH Watch & Jewelry Sales Rise

Sales of LVMH's watch and jewelry division grew 23 percent, to 1.55 billion euros (\$1.70 billion) in the half-year ended June 30. Measured at constant exchange rates, they were up 10 percent. The division posted a whopping 91-percent increase in profit from recurring operations: it jumped to €205 million (\$225.5 million).

Total sales for LVMH, the world's largest luxury-goods group, were up 19 percent (6 percent at constant exchange rates) to €16.71 billion (\$18.38 billion). The company's watch-only brands are TAG Heuer, Hublot and Zenith; it also makes Bulgari, Dior, Chaumet and LVMH-brand watches.

In a prepared statement, LVMH noted that jewelry turned in an excellent performance but watches were affected by "cautious purchasing behavior by multi-brand watch retailers." The company's biggest watch brand, TAG, was continuing to refocus on its core price range (\$1,000 to \$4,000) and "adapting its organization to this strategy." Bulgari, LVMH said, had strong growth fueled by the success of its jewelry and its women's watch collections Lucea and Serpenti. Hublot had an "excellent" start to the year, the company said, noting that the brand is expanding its manufacturing operations into an additional building in Nyon, where it is based.



Kazuhiro and Kazuo Kashio

## A New Generation Takes Charge

Casio Computer co-founder Kazuo Kashio has stepped down from his post as Casio president, tapping his son, Kazuhiro, to succeed him. The elder Kashio, 86, founded Casio in 1957 with his three brothers, Toshio, Tadao and Yukio. He was named president in 1988, succeeding Tadao Kashio. ("Casio" is an anglicized version of "Kashio.")

Kazuhiro Kashio, 49, joined Casio in 1991 and held a series of executive positions starting in 2007. In addition to president, he also holds the post of COO. He takes the reins at an auspicious time: Casio's profit has been growing steadily in recent years, following cost cutting and the spinning off of unprofitable businesses. For its latest fiscal year it posted a record net income of 26.4 billion yen (\$210 million), up 65 percent from the prior year. Watches are driving Casio's business, Kazuhiro wrote in the fiscal 2015 annual report. They are the largest category in Casio's consumer products division, which also includes calculators, electronic dictionaries, electronic musical instruments and digital cameras. The consumer division accounted for 85 percent of the company's 338.39 billion yen (\$2.71 billion) in sales in fiscal 2015.

For the next year or more, Kazuhiro Kashio will run the company with his father, who retains the titles of chairman and CEO. In the company's fiscal 2015 annual report, Kazuo announced that Casio would focus on increasing sales of GPS hybrid radio-controlled, solar-powered watches and watches that connect to a smartphone via Bluetooth. He also said that Casio would develop "a highly original wrist terminal."

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# Journe Brings Elegante to U.S.

It was the talk (if not necessarily the toast) of Geneva last year when the watch throngs gathered in January for the SIHH fair. Master of mechanical watchmaking François-Paul Journe had introduced, of all things, a quartz watch, a women's model in a tonneau-shaped case. Mechanical-watch purists shuddered. (Journe does not exhibit at SIHH; he shows his watches during fair time in his headquarters/factory in the center of Geneva.)

This summer, the watch, called the Elegante, made its U.S. debut, at Journe's New York boutique. It is not your typical quartz watch. Journe says he spent eight years working on it. To develop the electrical components, which are made in Switzerland, he hired the Swiss engineer Walter Hammer, who worked on the early Swiss quartz Beta movements launched

in the late 1960s. The watch has its own proprietary microprocessor.

One unusual feature: the Elegante is equipped with a mechanical motion sensor, visible through the dial at the 4:30 position. (Journe makes all the watch's mechanical components.) When the watch is stationary for half an hour, its hands stop moving and remain in "sleep" mode until the watch is picked up or shaken. The hands then move forward or backward (whichever is the shorter route) to indicate the current time, as if they had never stopped. The point of this feature is to prolong the watch's battery life: Journe says the battery will last for 10 years with normal wear.

Also noteworthy: the watch has a transparent back, unlike (virtually) any other quartz watch. The back plate is made of rose gold and decorated with Geneva stripes. A small heart marks the position of the microprocessor.

The dial is luminous: in the dark, the hands look like black shadows against a bright background. The case is 34 mm by 35 mm and available in titanium, rose gold or platinum. All are available with



*F.P. Journe's Elegante women's quartz watch is making its U.S. debut.*

one row of diamonds. The rose-gold and platinum models also come fully set and the titanium version is available with no diamonds. Prices range from \$11,500 to \$65,300.

So why quartz? Journe, who has often been asked to come up with a women's watch, says most women won't buy mechanical watches. He had some reservations about the watch until he talked to his friend Richard Mille. "Don't worry about making a quartz watch for women," Mille told him. "You are Journe!"

François-Paul Journe



*A small heart marks the position of the microprocessor.*





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# Chrono Queries

*Test your knowledge of column wheels, cams, and chrono-movement clones.*



*Which movement is a clone of the ETA 7750?*

1. What is the defining feature of a doppelchronograph?  
 A. Two elapsed-time counters  
 B. A split-seconds feature  
 C. A center-mounted minutes counter  
 D. Separate escapements for the chrono function and the regular time

2. What brand claims that the watchmaker for which it was named invented the chronograph?  
 A. Breguet  
 B. Blancpain  
 C. Louis Moinet  
 D. Graham

3. How long will the chronograph in the Breguet Tradition Chronographe Independent run before its power is depleted?  
 A. 20 minutes  
 B. Two hours  
 C. Eight hours  
 D. 36 hours

4. What company aroused controversy when it described its new chronograph Caliber 1887 as an “in-house” caliber?  
 A. Breitling  
 B. IWC Schaffhausen  
 C. Patek Philippe  
 D. TAG Heuer

5. Which Rolex model has a countdown timer?  
 A. Cosmograph Daytona  
 B. Sky-Dweller  
 C. Yacht-Master  
 D. Yacht-Master II

6. The Tri-compax of 1944 was the most popular chronograph of its time. Who made it?  
 A. Universal Genève  
 B. Minerva  
 C. Heuer  
 D. Chronoswiss

7. The Dark Side of the Moon is a dark-dial-and-case version of what chronograph model?  
 A. Rolex Cosmograph Daytona  
 B. Zenith El Primero  
 C. Omega Speedmaster  
 D. Breitling Navitimer

8. Which of the following is not a chronograph movement?  
 A. Rolex 4130  
 B. Breitling B01  
 C. Omega 9300  
 D. Jaeger-LeCoultre 899

9. What does a column wheel do?  
 A. Links the chronograph wheel with the fourth wheel  
 B. Controls the on and off functions  
 C. Drives the minutes counter  
 D. Returns all the chrono hands to zero

10. Which of the following is not true of the ETA 7750?  
 A. It uses cam switching.  
 B. It has a chronograph module.  
 C. It was launched in the 1970s.  
 D. It has a stop-seconds function.

11. Which movement is a clone of the ETA 7750?  
 A. Soprod A10  
 B. Sellita SW 300  
 C. Sellita SW 500  
 D. Sea-Gull ST 18

12. Rolex began making its own chronograph movements in 2000. Who supplied its chronograph movements immediately before then?  
 A. ETA  
 B. Jaeger-LeCoultre  
 C. Nouvelle Lemania  
 D. Zenith

13. A chronograph’s telemeter scale can be used to measure which of the following?  
 A. Distance of an electrical storm  
 B. Distance of an earthquake  
 C. Average speed of a racecar over one lap  
 D. Speed of a racecar at the finish line

14. In 1908, Heuer introduced a type of chronograph called a sphygmometer. What was its purpose?  
 A. Taking pulses  
 B. Timing horse races  
 C. Determining the distances of foghorn signals  
 D. Measuring the speed of an approaching ship

15. Which movement maker is well-known for its chronograph modules?  
 A. Soprod  
 B. Technotime  
 C. Dubois Dépraz  
 D. Chronode

Answers: 1B; 2C; 3A; 4D; 5D; 6A; 7C; 8D; 9B; 10B; 11C; 12D; 13A; 14A; 15C

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# BRAND NEW

## HYT

- HYT has launched three new H1 models in honor of the brand's being named the official timer of the RC44 Championship Tour, created by champion sailor Russell Coutts. The one shown here is the H1 Air Black Pixel.
- Incorporates HYT's "hydro-mechanics" technology, in which liquid moves through a tube to indicate the hours
- Seconds display via rotating disk to the left of minutes dial
- Power-reserve display to the right of minutes display
- Bellows that drive the fluid are visible through sapphire dial.
- Titanium case with black DLC coating
- Limited edition of 25 pieces
- \$64,000



## BRM

- BRM's Chevrolet Corvette C7.R Racing collection is the product of a licensing agreement between BRM and General Motors. The collection's limited-edition (24 pieces) automatic chronograph commemorates Corvette Racing's class victory in the 24 Hours of Le Mans in June.
- Special-edition version of BRM's V12-44-COR chronograph
- 24-hour dial, a reference to the 24 Hours of Le Mans
- Hands and dial and strap accents in Corvette Racing's signature yellow
- Chronograph pushers bear pictures of Jake, the Corvette Racing mascot.
- Strap designed to resemble a racecar seatbelt
- \$10,750

## RAYMOND WEIL

- The Freelancer Piper, Raymond Weil's first pilots' watch, is being manufactured under an agreement with Piper Aircraft Inc.
- Self-winding chronograph with GMT and date functions
- Hour and minutes hands resemble rotor blades on a Piper aircraft.
- GMT hand resembles a compass needle.
- Subdial at 9 o'clock resembles a plane's attitude indicator.
- 45-mm case
- Titanium and stainless steel
- Comes with Raymond Weil-branded model of Piper aircraft
- Limited edition of 1,500 pieces
- \$3,495



## ALPINA

- The Seastrong Dive 300 Chronograph Big Date comes in a choice of four bezel colors: orange, deep red, navy blue or gray.
- Quartz movement with split-seconds function
- 300-meter water resistance
- Aluminum, unidirectional bezel
- Hands, dial indexes and minutes markers on bezel are luminous.
- 44-mm, stainless-steel case
- Wide minutes hand for easy reading under water
- Big date at 6 o'clock
- \$1,295



## DEWITT

- The Academia Chronostream II automatic chronograph, bearing the brand's signature "column" motif on its dial and case sides
- Self-winding Caliber DW 6005
- Rose-gold and black rubber case
- 42.5 mm in diameter
- Clous de Paris decoration in center of dial
- Tachymeter scale
- Water resistant to 30 m
- Alligator strap
- \$47,200



## NOMOS

- The Lambda is now available in a smaller, 39-mm case (versus 42 mm for the larger model).
- Rose-gold case
- Manual-wind, in-house Caliber DUW 1001
- Double barrels for power reserve of 3½ days
- Large power-reserve display on upper half of dial
- Curved sapphire crystal
- Transparent sapphire caseback
- \$17,000



## MÜHLE-GLASHÜTTE

- The Teutonia II Chronograph is one of the new models in the Teutonia family that have midnight blue dials.
- Stainless-steel case with transparent back, 42 mm in diameter
- Hour and minutes counters, diagonal day and date displays at 4 o'clock
- Automatic MU 9413 movement with woodpecker-neck regulation
- Quick date and day correction
- 48-hour power reserve
- Water resistant to 100 meters
- Crocodile leather strap; also available on stainless-steel bracelet
- \$4,599



## RICHARD MILLE



## LINDE WERDELIN

- Inspired by the racecar industry, the **SpidoSpeed Titanium** pairs skeletonized construction and industrial-style design.
- 44-mm x 46-mm three-part grade 5 titanium skeletonized case
- Skeletonized dial with LW blue detailing on the hands
- LW06 skeletonized movement with 48-hour power reserve
- Water resistant to 100 meters
- Interchangeable natural rubber strap in LW blue
- Limited edition of 99 pieces
- \$19,200

- Designed in collaboration with tennis star Rafael Nadal, the **RM 035 Americas** is the first Richard Mille watch with Swiss Chronofiable certification.
- Tripartite case (48 mm x 39.70 mm) made from black TZP matte ceramic; NTPT carbon caseband and crown
- Sapphire caseback
- Skeletonized manual-winding RMUL1 caliber weighing only 4.3 grams
- Red and yellow Super-LumiNova accents on the indexes and hands
- Black rubber strap
- Limited edition of 50 pieces exclusive in the Americas
- \$120,000

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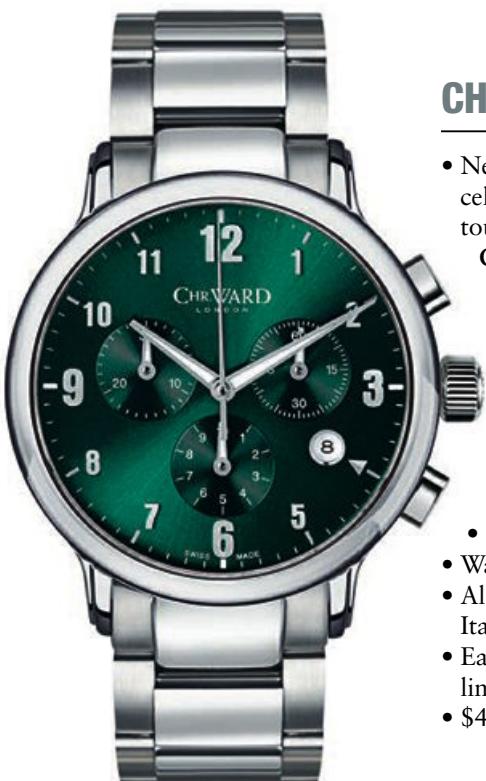
## CHOPARD

- The Superfast Chrono Porsche 919 Jacky Ickx Edition is dedicated to racecar driver Jacky Ickx and bears his colors.
- Self-winding COSC-certified Chopard 03.05-M chronograph movement
- 60-hour power reserve
- Steel 45-mm case secured by eight blackened screws
- Engraved commemorative caseback
- Black rubber strap inspired by racecar tires
- Limited edition of 100 pieces
- \$13,110



## SQUALE

- This remake of the 101 Atmos from the '70s, the Squale 2002, is a 1,000-meter dive watch that has a 3.5-mm thick sapphire crystal with a double gasket to ensure its water resistance.
- Press-to-release bidirectional bezel that can be unscrewed from above
- Black and orange bezel insert made of Bakelite; color won't fade from exposure to salt water.
- Automatic ETA 2824-2 movement
- Stainless-steel case, 43 mm x 53mm, stainless-steel caseback
- Black, orange, blue or yellow dial
- Adjustable-length rubber strap with safety catch that matches the dial color
- Also available with PVD-coated case and steel or PVD-coated bracelet
- \$1,350



## CHRISTOPHER WARD

- New Malvern limited-edition models celebrate the Wimbledon tennis tournament. Shown, the C3 Malvern Chronograph MKII Limited Edition
- Each model comes in one of two dial colors: Wimbledon green or purple.
- Ronda quartz movement with 1/10-second split timing function
- Swiss made
- 39-mm stainless-steel case
- Screw-in caseback
- Water resistant to 50 meters
- Also available with alligator-pattern Italian leather strap
- Each model and strap option is a limited edition of 100 pieces.
- \$415



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# Cellini Goes Automatic

*Rolex launched the first Cellini self-winding models last year. We test one of them, the Cellini Time.*

BY JENS KOCH

PHOTOS BY NIK SCHÖLZEL

TEST

## Rolex Cellini Time

*The watch contains  
Rolex's in-house  
Caliber 3132,  
shown here after  
we removed the  
caseback.*



# R



Rolex's Cellini collection of gold dress watches is far less well known than its famed Oyster series. One factor may be that Cellini models have only been available with manual-wind movements. That changed last year, when Rolex launched three Cellini automatics: a time-only model, a date model and a two-time-zone model.

We tested the time-only watch, called, simply, the Cellini Time. It's equipped with Rolex's in-house Caliber 3132, also used in the Rolex Explorer, and known for being extremely sturdy and accurate. The watch has the appeal of a well-cared-for classic from the 1950s. Although it is not intended to have a vintage look, it incorporates several design elements that echo Rolex's past, including a curved, polished case with downward sloping lugs, a narrow bezel with fluted ring, a domed and polished caseback and a glossy, varnished strap with narrow, flat-pronged buckle. The dial, too, has a classic mien, with its sword-shaped hands and applied faceted markers. The minutes track and the elongated Roman numerals at 12, 3, 6 and 9 o'clock give it a distinctive look. The watch's 39-mm diameter is appropriate for today's tastes.

The hands contrast enough with the dial to make reading the time quick and easy, assuming there is sufficient light, since luminous coating has been omitted in favor of elegant design. The absence of a date display enhances the watch's look of elegance and makes operation simpler, as does the fluted crown. It is surprising that the crown is of the screw-down type, more likely to be found on a sports watch than on an elegant dress model, but the screw-down feature does provide added protection and water resistance.

The Cellini Time is beautifully finished. The dial, hands and case are flawless. The quality of the polishing is especially apparent on the inner surfaces of the lugs and buckle, where many watches reveal burrs or uneven spots. Just as nicely made are the sloping spring bars and the matching strap, which fits closely to the case. The spring bars are placed rather far down on the lugs to improve wearing comfort.

The smooth, curved caseback hugs the wrist nicely. The strap initially remained stiff and resisted bending, which caused the watch to slip back and forth, but this probably improves after a few weeks of wearing. Small cracks tend to appear in a varnished strap because it is less flexible, and while it doesn't look bad, perfectionists might find it distracting. They might also find fault with the caseback, which is highly polished, so that even minor scratches will be obvious. The caseback is solid, as it is on all the new automatics: within the Cellini collection, only the Prince models have windows in their casebacks.

But there is no reason for the movement to hide. Caliber 3132 is decorated with a sunburst finish on the rotor, perlage on the bridges, polished screw heads and some beveled edges. The movement has a height-adjustable balance bridge, free-sprung blue Parachrom balance spring made of a patented niobium-zirconium alloy and fine regulation via screw weights on the balance wheel.

## SPECS

## ROLEX CELLINI TIME

**Manufacturer:** Rolex SA, Rue François-Dussaud 3-7, CH-1211 Geneva 26, Switzerland

**Reference number:** 50509

**Functions:** Hour, minutes, seconds

**Movement:** In-house Caliber 3132, automatic, COSC-certified chronometer, 28,800 vph, 31 jewels, hacking mechanism, quick date adjustment, Paraflex shock absorbers, Glucydur balance with Microstella regulating screws, Parachrom balance spring with overcoil, 48-hour power reserve, diameter = 28.5 mm, height = 5.37 mm

**Case:** White gold with curved sapphire crystal, screw-down crown, fully threaded white-gold caseback, water resistant to 50 m

**Strap and clasp:** Alligator strap with white-gold pronged buckle

**Rate results:**

Deviations in seconds per 24 hours

Dial up	+4
Dial down	+4
Crown up	+4
Crown down	+2
Crown left	+6
Crown right	0
Greatest deviation	6
Average deviation	+3.3

Average amplitude:

Flat positions	304°
Hanging positions	268°

**Dimensions:** Diameter = 39 mm, height = 11 mm, weight = 87.5 g

**Variations:** Everose gold, both cases available with black or white dial

**Price:** \$15,200

*CALIBER 3132, ALSO  
USED IN THE EXPLORER,  
IS KNOWN FOR ITS  
STURDINESS AND PRECISION.*

*The curved case fits  
the wrist nicely.*



TEST

Rolex Cellini Time



## SCORES

### ROLEX CELLINI TIME

<b>Strap and clasp (max. 10 points):</b> The machine-stitched alligator strap quickly shows minor cracks on its surface. The white-gold pronged buckle is meticulously polished.	7
<b>Operation (5):</b> The screw-down crown is easy to use, thanks to the hacking mechanism.	5
<b>Case (10):</b> The white-gold case, with flowing lines and curved caseback, is superbly finished and carefully polished.	9
<b>Design (15):</b> Rolex has succeeded in creating an elegant, classic design with several references to its past.	14
<b>Legibility (5):</b> The Cellini is easy to read. The hands contrast well with the dial and they are the correct length.	4
<b>Wearing comfort (10):</b> Thanks to the curved caseback and lightweight case, the Cellini is a pleasure to wear. The strap is rather stiff, but only at the beginning.	8
<b>Movement (20):</b> The in-house movement with automatic winding mechanism was previously found only in Rolex sports models, and is designed for sturdiness, longevity and accuracy.	18
<b>Rate results (10):</b> The Cellini shows only a slight gain and narrowly distributed values in every position.	8
<b>Overall value (15):</b> The price is appropriate for a gold watch with an in-house movement. This watch may not retain its value as well as Rolex's stainless-steel sports models.	13
<b>TOTAL:</b>	<b>86 POINTS</b>

*The domed caseback and fluted ring recall Rolex's past.*

**THE TIMING MACHINE SHOWED AN AVERAGE GAIN OF 3.3 SECONDS AND A MAXIMUM DEVIATION OF 6 SECONDS.**

The movement has Paraflex shock absorbers, which Rolex says increase the balance's shock resistance by up to 50 percent. Superior shock resistance is perhaps not necessary with a dress watch, but it can't hurt. The movement is a COSC-certified chronometer, though this is not noted on the dials of Cellini watches as it is on Oyster models, all of which are COSC-certified.

Rolex is known for accurate timekeeping, and our tested watch upheld this reputation. Our Witschi timing machine confirmed the excellent rate results recorded during the wearing test, where the watch showed a gain of 5 seconds per day. On the machine, the deviation ranged from 0 to +6 seconds and the average gain was 3.3 seconds per day.

The \$15,200 price is appropriate for a gold watch with a good *manufacture* movement. A Jaeger-LeCoultre Master Control costs a bit more. The steel Rolex Explorer, with the same movement and a case made of steel, costs \$6,550. An additional premium of \$8,000 to \$10,000 for a gold case compared to steel is reasonable, but it remains to be seen whether the Cellini models will retain their value as well as the Oyster stainless-steel sports watches.

Customers in the market for an elegant and discreet gold watch should find what they are seeking in this watch. It has no major weaknesses. The watch is especially notable for its sturdy and accurate *manufacture* movement and excellent finishing. Perhaps it is time for the Cellini to step out of the shadow of the Oyster and into the limelight.

○

# BREGUET MILESTONES

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*On the eve of Breguet's first major U.S. exhibition, which opens in September in San Francisco, here's a survey of some of the most important Breguet watches.*

BY GISBERT L. BRUNNER





# Circa 1780

## PERPÉTUELLE

In 1775, the Swiss-born Abraham-Louis Breguet (1747 – 1823) set up shop in Paris, where he would spend most of his career. One of the greatest watchmakers of all time, he would, over the following decades, come up with an amazing parade of inventions and innovations. His first major one was an automatic-winding device called the “*perpétuelle*,” which he developed sometime between 1775 and 1780 (no one knows exactly when the first *perpétuelle* was made). The watch contained a platinum weight, shaped rather like a round point shovel, which swung back and forth as the wearer walked, winding the watch’s two barrels. The dial had a power-reserve indicator. Most *perpétuelles* had power reserves of 60 hours.

According to the watch historian Jean-Claude Sabrier, the system was so effective that it could wind the mainspring completely in just 10 minutes. Breguet sold his first *perpétuelle* watches to Marie Antoinette, Count Fersen and the Duc d’Orléans.

By 1786, writes George Daniels in his book, *The Art of Breguet*, the watchmaker had improved the device enough so that he could begin making *perpétuelles* in quantity (meaning dozens per year: Breguet made fewer than 100 *perpétuelles* in his lifetime). They were extremely expensive to produce, which may be why the *perpétuelle* mechanism did not come into widespread use. (Nor did the self-winding system that Abraham-Louis Perrelet had introduced around 1770. Self-winding watches did not become common until the mid-20th century.)

The *perpétuelles* were notable for their appearance as well as their movements: the cases were flat and simple; their dials were easy to read. These watches signaled Breguet’s break from the ornate styling that prevailed at the time.



Pare-chute shock absorber in a subscription watch from the 1790s (see next item)

# 1790

## “PARE-CHUTE” SHOCK ABSORBER

Abraham-Louis Breguet was not only a skillful watchmaker, but also a savvy businessman who planned farther ahead than his competitors. One example of his farsightedness is the so-called “pare-chute,” an invention prompted by the fragility of a watch’s balance-staff pivots. To protect these parts against breakage, Breguet devised a resilient steel spring with a free end that bore the vulnerable components. If the watch were dropped or knocked, the spring absorbed the shock so that the pivots would not break. (The name “pare-chute,” also spelled “parachute,” means “protection against falls” and is derived from French.) According to Emmanuel Breguet, author of *Breguet: Watchmakers since 1775* (and a descendant of Abraham-Louis Breguet), the watchmaker began his work on the device around 1790 and within two years was equipping some of his watches with it.

Legend has it that in 1790, at a reception hosted by Charles-Maurice de Talleyrand-Périgord, then the bishop of Autun and later France’s foreign minister (and an important Breguet customer), the watchmaker was challenged to prove that his pare-chute actually worked. To do so, he threw his own pare-chute-equipped pocketwatch on the floor. To the amazement of the onlookers, the watch was still ticking when he picked it up. Breguet spent the next few years improving his invention, which had its public debut at an exhibition in the Dôme des Invalides in Paris in 1805. Breguet’s clever device was the precursor to the shock absorbers now found in all mechanical wristwatches.

# 1796

## SOUSCRIPTION WATCH

In 1793, on the eve of the Reign of Terror, Breguet faced possible execution at the hands of the revolutionaries because he rejected the most radical of their political beliefs. He fled France for his native Switzerland, where he stayed for two years. While there, he designed a watch called the “*souscription*,” which he could sell for much less money than he charged for the luxurious models he had once made for the now decimated French aristocracy. The watches had a single hand and most were fitted with relatively inexpensive ruby cylinder escapements. The watchmaker had improved this once-imprecise type of escapement to the point where it kept time to a respectable 1 minute per day.

Breguet sold the first of his *souscription* watches in 1796, using a method that was as novel as the watches themselves. It was, in effect, an early form of the installment plan. A customer “subscribed” to the watch by making a down payment of one-quarter of the watch’s price. He paid the remainder when he took delivery of the piece. The *souscription* models brought many new customers to Breguet, who made about 700 such watches.



A *souscription* watch from the 1790s (movement shown in prior item)



# 1801

## TOURBILLON

Possessed of an analytical mind, Breguet knew that gravity disturbs the rate of a pocketwatch when the timepiece is worn in a vertical position. The tiniest eccentricities in the center of gravity of the balance and balance spring, as well as various frictional relationships, can lead to acceleration or deceleration of the balance’s oscillations.

Even the most meticulous fine adjustments couldn’t entirely eliminate these eccentricities, so Breguet’s thoughts turned to compensation. He mounted the balance, the balance spring and the escapement inside a lightweight steel cage that rotated around its own axis. Fractions of a second lost to deceleration, e.g., during the first half of a minute, were regained by corresponding acceleration during the second half of the minute. Breguet received a patent for his “*régulateur à tourbillon*,” as he dubbed it, on June 26, 1801. The device’s public presentation followed at the Paris Industrial Exposition in 1806.

# 1929

## PERPETUAL CALENDAR WRISTWATCH

Breguet completed his first perpetual calendar pocketwatch in 1795. The calendar adjusted automatically to account for months of different lengths and for leap years and would not require manual setting until 2100.

The first wristwatch with a perpetual calendar — along with a moon-phase display — was developed by the Breguet company, then owned by the Brown family, on the eve of the Great Depression. The fine, hand-wound movement measured slightly less than 23 mm in diameter, was equipped with 18 jewels and — as an elaborate special feature — also included simultaneously jumping indicators. The watch, completed in 1929, had a tonneau-shaped, white-gold case. On April 14, 1991, the Antiquorum auction house in Geneva auctioned it off for 550,000 Swiss francs.



# 1933

## AUTOMATIC WRISTWATCH

Breguet's first automatic wristwatch, an art deco men's model bearing the number 2626, was made in 1933. It was powered by a so-called "*perpétuelle à masse*," i.e., a semicircular oscillating weight mounted on a separate plate. The 9-ligne movement, which had a Swiss lever escapement, was plated with gold. The bimetallic compensating balance and its blued Breguet balance spring had a frequency of 18,000 vph. Equipped with a rectangular platinum case, a crown at 12 o'clock, an arc-shaped power-reserve display and a hand-type date display, the watch was sold to Sir Percival David for 8,500 French francs in 1933. The same timepiece was sold for 132,250 Swiss francs at Antiquorum's auction of Breguet watches in 1991 in Geneva.

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## Legion of Honor

LINCOLN PARK • SAN FRANCISCO

This exhibition is organized by the Fine Arts Museums of San Francisco in collaboration with Montres Breguet.

Reverse side image: Small (*médallion*) simple watch. Gold engine-turned case, silver engine-turned dial with phases of the moon and fast/slow regulator hand, barrel with pierced arbor wound with a male key, ruby cylinder escapement. Diameter: 1  $\frac{5}{16}$  in. (3.3 cm). Collection Montres Breguet S. A. B2784

Above image: "Marie-Antoinette" watch. Automatic (*perpétuelle*) minute-repeating watch. Complete automatic date, equation of time, power reserve, metallic thermometer, platinum oscillating weight, sapphire bearings and rollers, large independent seconds hand and small direct-drive gold and steel hands. Diameter 2  $\frac{1}{2}$  in. (6.4 cm). Replica made by Montres Breguet S.A. 2005-2008 B1160



# 1954

## TYPE XX CHRONOGRAPH

In the mid-20th century, under the ownership of the Brown family, Breguet began making pilots' chronographs with elapsed-time counters. (The Browns owned Breguet from 1870 to 1970.) The company continued to develop these special watches in collaboration with airlines and airplane manufacturers.

Beginning in 1954, three generations of the Type XX Chronograph were built for France's Centre d'Essais en Vol, the military agency that approves new aircraft. The stopwatch was based on Breguet's first wristwatch chronograph, which had debuted in 1935. Its distinguishing features were a rotating, easy-to-grasp bezel and a flyback mechanism, which responds to a single push of a button by returning the chronograph's elapsed-seconds hand to zero and instantly restarting it. Breguet produced similar instruments for the pilots of the French Air Force. The dial and hands were designed to be easily legible in all lighting conditions. The Type XX contained the 14-ligne Caliber 22, made by Valjoux.

# 1988

## TOURBILLON WRISTWATCH

The movement maker Nouvelle Lémania developed the first wristwatch tourbillon movement for Breguet in the mid-1980s. (Nouvelle Lémania is now known as Manufacture Breguet. The Swatch Group bought both the Breguet brand and Nouvelle Lémania in 1999 and folded the latter into the former.) The tourbillon in the 13½-ligne, hand-wound Caliber 387 is located at 6 o'clock. The balance has a frequency of 18,000 vph. The hour and minutes hands share an off-center dial at 12 o'clock. The brand debuted a gold wristwatch with a tourbillon in Basel in 1988, when Breguet was owned by Investcorp. A second tourbillon model, Reference 3357BA/12/986, came out in 1990. Nouvelle Lémania also made the movement for that watch.



# 1991

PERPETUAL EQUATION OF TIME 3470BA

The earth follows an elliptical orbit around the sun and the earth's axis is not perpendicular to the elliptic plane, so the duration of the true solar day continually changes throughout the year. The shortest and longest solar days differ by 30 minutes and 45 seconds, but their difference is small enough so that timekeeping for ordinary life needn't take account of it. Our clocks and watches therefore indicate mean solar time, in which a day has exactly 24 hours, and not actual solar time. An equation-of-time indicator shows the difference between mean solar time and true solar time.

In 1991, Breguet unveiled a watch with a perpetual equation of time, i.e., an equation-of-time indicator paired with a perpetual calendar. The equation-of-time display, like the displays for the date, did not have to be adjusted for leap years. Breguet received a patent for the watch.



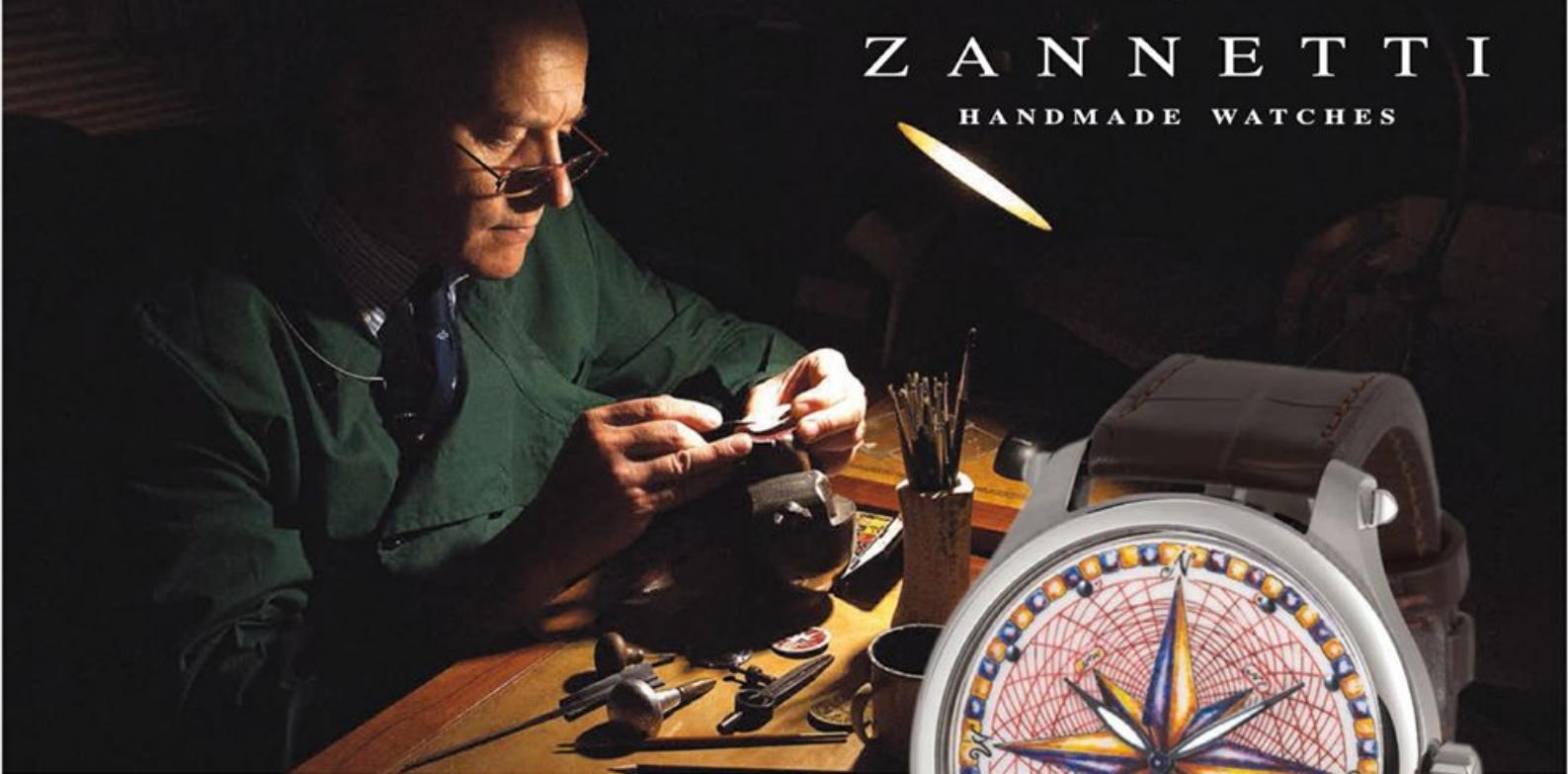
# 2003

RÉVEIL DU TSAR 5707

The movement of the Réveil du Tsar (the Tsar's Alarm), introduced in 2003, was given the alphanumeric designation 519F. Able to indicate the time in a second time zone, this 12-ligne alarm caliber has a 40-hour power reserve. The designers wanted the second-time-zone time to be easy to read, so they put it in a subdial, graduated into 24 hours, at 9 o'clock. The alarm mechanism, which consists of a hammer striking a gong continuously, can be set to the nearest 5 minutes; the alarm sounds for 20 seconds. The alarm has its own power-reserve display. An indicator at 12 o'clock shows whether the alarm function is turned on. The movement contains 404 components.



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2005

TRADITION 7027

Caliber 507DR was designed for the watch lover who wants to see his watch's movement at work without having to take the watch off his wrist. Nearly everything is visible through the sapphire crystal in the front. The complete gear train, including the screw balance and Breguet balance spring, is readily visible. The dial, embellished with manually applied guilloch , is positioned off center at 12 o'clock. The power reserve is shown twice, on the watch's front and back. The pivots of the balance staff are protected by an unconventional shock absorber that looks very much like Abraham-Louis Breguet's pare-chute device from the late 18th century (see 1790 milestone). The balance has a frequency of 21,600 vph, rather than the more common 28,800 vph, to make it easier to see the wheel rotating back and forth.

2006

CLASSIQUE 5347 GRANDE COMPLICATION

This hand-wound watch boasts two tourbillons. They're mounted on a rotating plate and are linked by a differential. The plate requires 12 hours to complete one rotation. The differential conveys the average speed of the two tourbillons to the rotating plate and thus to the motion work, so the rate corresponds to the average value of the two rotating escapements. Fluctuations in isochronism in the vertical position cancel each other out. The rotating plate bears the hour hand. The minutes are shown by a traditional center-mounted hand. The case, made of platinum, is designed in classical Breguet style and has a diameter of 44 mm. The movement has been awarded three patents.





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# 2007

## TOURBILLON MESSIDOR 5335

Because it was Abraham-Louis Breguet who invented the tourbillon, the modern-day Breguet has made the tourbillon a major feature of its brand identity, bringing out variations and improvements on the device year after year. In 2007, Breguet introduced the Classique Tourbillon Messidor, which is powered by the 13½-ligne *manufacture* Caliber 558SQ2. (Messidor, a month in the French Revolutionary calendar, was when Abraham-Louis Breguet patented the tourbillon. The year was 1801, or, in French Revolution terms, year IX.)

While most tourbillons are partially eclipsed by a bridge, this one is completely visible because the bridge is made of transparent sapphire, with holes drilled for the bearings. The driving wheel and the dial are also made of sapphire. The movement, which is manually wound, is skeletonized, thus providing an unobstructed view of the tourbillon's rotating cage. The case is platinum.



# 2010

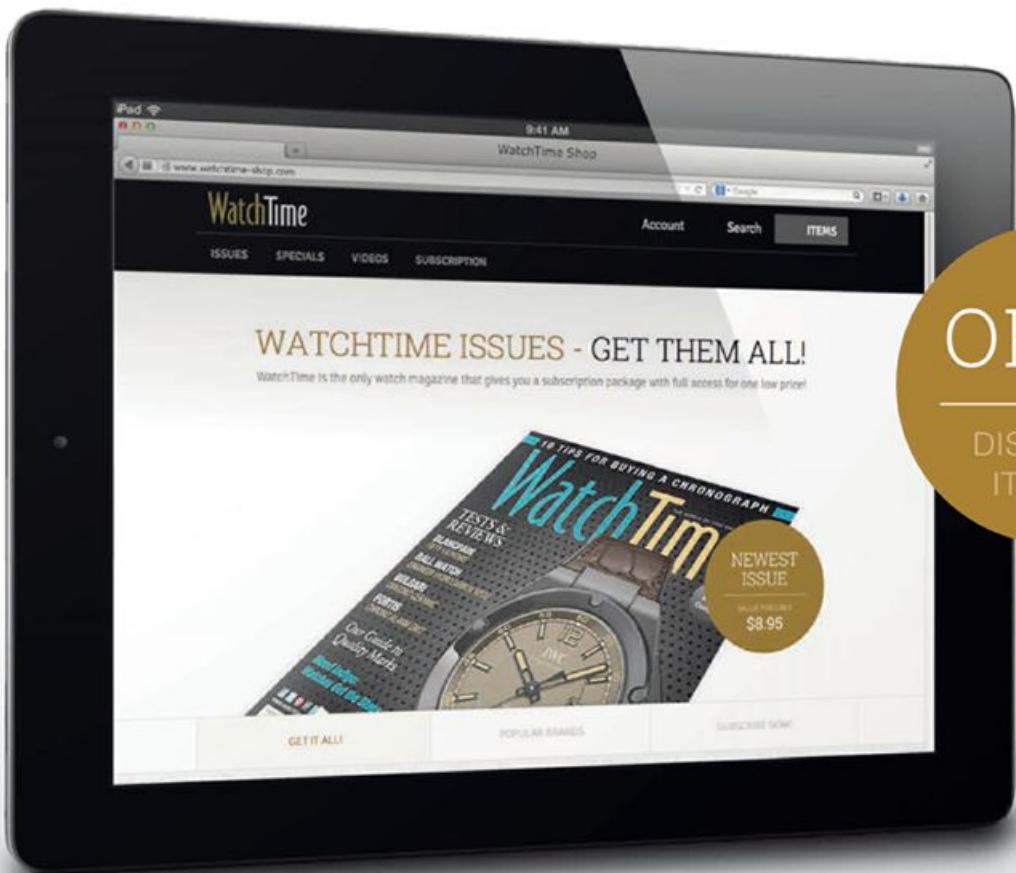
## TRADITION BREGUET 7047 TOURBILLON FUSÉE

Breguet unveiled its first watches with silicon escapements and silicon balance springs in 2006. This material is also used in the Tradition Breguet 7047 Tourbillon Fusée, which was introduced in 2010 (the first version had a platinum case; a rose-gold model came out in 2012).

The watch's most unusual feature is its chain and fusée, a device invented in the 16th century to even out the torque supplied by the mainspring barrel so that the movement receives a steady level of energy through its entire running time. The fusée is in full view to the right of the time dial. A slender chain connects the barrel to the fusée, which is conical in shape and has a spiral groove cut into it. As the mainspring unwinds, the chain uncoils from the fusée and wraps around the barrel. The chain uncoils first from the fusée's top, where it exerts the least leverage, and finally from the bottom, where it exerts its greatest force. The increasing diameter of the fusée compensates for the barrel's gradually diminishing torque. An indicator mounted directly on the barrel shows the remaining status of the 50-hour power reserve.

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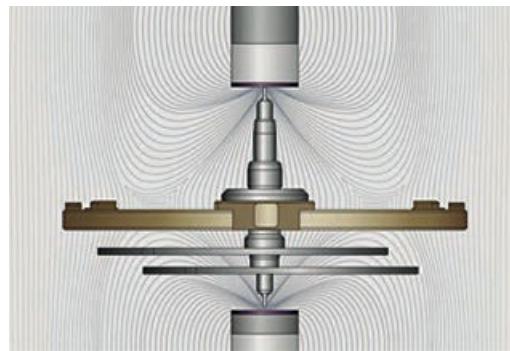
2011

**HORA MUNDI 5717**

With the Hora Mundi 5717, Breguet launched a world's first: a second-time-zone mechanism that enables the wearer to toggle back and forth between two time zones by simply pushing a button. Doing so causes the hour hand, date, city and day/night indicator (which sits between 3 and 4 o'clock and looks like a moon-phase display) to move simultaneously to display the new information.

The date is shown in an arc-shaped window at 12 o'clock. Beneath the window is a rotating date disk. The current date is framed by a little circle at the tip of a hand. This hand accompanies the date from left to right through the arcing aperture as the day progresses. At the stroke of midnight, the hand leaps back to its starting position, where it encounters the numeral for the new day's date.

The base movement is Caliber 77FO, which has a silicon escapement. The watch has four patents protecting its two-time-zone feature and its date display. There are three versions of the dial, one showing Europe and Africa, another the Americas, and a third Asia and the Pacific Ocean.



2013

**CLASSIQUE CHRONOMÉTRIE**

The headline feature of the Classique Chronométrie 7727 is micro-magnets. There are two of them, one in each of the endstones that support the balance-staff pivots. The pivots move in the field generated by these magnets. This nearly contact-free bearing allows the pivot to shift laterally so that hard blows can cause no damage. It also reduces friction, thereby increasing precision. According to Breguet, the watch has a rate of  $-1/3$  seconds per day.

Conventional balance springs would malfunction because they would become magnetized, so the springs in this watch – there are two of them – are made from silicon, which cannot become magnetized. The lever and escape wheel are also made of silicon, which reduces friction and, because it is lightweight, minimizes the amount of energy consumed by the oscillating and escapement system. The balance, made of titanium, has a frequency of 72,000 vph. (For more on the Classique Chronométrie 7727, see "Breguet's Magnetic Moment" in the April 2014 issue.) ○



NAUTISCHE INSTRUMENTE  
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## Seebataillon GMT

Mühle Glashütte's CEO, Thilo Mühle, participated in The Fulda Challenge—an extreme Winter sports competition that challenges athletes in Canada's Yukon, complete with dog mushing, snowshoe racing and ice chopping. With a timepiece chosen for the elite unit of the German Navy on his wrist, the Seebatillon GMT proved to stand upto the extremes of The Fulda Challenge. In cooperation with the soldiers of the 'Seebatillon', an extremely robust watch with a second time zone has been developed in both design and functionality, proving it's well-equipped for every mission—whether or land, sea or in the air.

For more information please contact:

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Marvin Scott & Co., Yardley, PA | Jack Ryan Fine Jewelry, Austin, TX | Timeless Luxury Watches, Frisco, TX  
Fox's Seattle, Seattle, WA | Trident Jewels and Time, St. Thomas, USVI | Ray's Jewelry, Philipsburg, St. Maarten

# RALPH LAUREN 2.0

*After six years, the Ralph Lauren Watch & Jewelry Co. is at a turning point. Here's a look at the company's future.*

BY JOE THOMPSON

In January 2009, the night before the opening of the annual SIHH watch exhibition in Geneva, Richemont Group Chairman Johann Rupert threw a black-tie gala dinner at the ornate Grand Theatre in the center of Geneva. The occasion was the launch the next day of the first Ralph Lauren watch collection, produced by the Ralph Lauren Watch & Jewelry Co., a 50-50 joint venture between Switzerland's Richemont Group and America's Ralph Lauren Corp.

Rupert and Lauren, two friends who have built multi-billion-dollar businesses (their friendship led to the business partnership) both gave speeches. "It's not a [fashion] label," Rupert said of the joint venture company. "It's a watch business. It's a very serious watch business."

Lauren replied to Rupert, "I've worn your watches. I've collected them. I've admired them. I felt I wanted to make my own statement."

And so he has. For the past six years, the New York-born, bred, and based fashion god has designed luxury watches his way. Priced solidly in the Richemont Group wheelhouse, mainly between \$9,000 and \$30,000, Lauren has married American design chic to Swiss horology, exploring his distinctive design motifs in mechanical collections for men, like the Safari and

Automotive, and quartz and mechanical women's collections like the Stirrup.

It hasn't been easy. January 2009, with the world sliding head first into recession, was the worst time in memory to launch a new watch brand. Plus, joint ventures are notoriously tricky. "Not just this one," says a Swiss watch industry executive familiar with the company. "Any one. Because you have two cultures coming together." Most of the original Swiss management team was gone by the end of 2012. (That team is based in Plan-les-Ouates, outside of Geneva. The Ralph Lauren Corp. team is based in New York.)

Last fall Ralph Lauren tapped Luc Perramond, a French-born veteran of the Swiss watch industry, most recently CEO of La Montre Hermès, to be president and CEO of RLWJ. Perramond officially started in February. Recently, over dinner at (where else?) the Ralph Lauren-owned Polo Bar in New York, Perramond talked with WatchTime about the future of the watch industry's most intriguing joint venture.

**ONE OF THE MOST** intriguing things about it is the venture partners' massive assets. Richemont is the world's second-largest luxury group, with net revenue amounting to \$11.8 bil-



*RL67 Safari  
Chronometer  
with canvas strap  
(\$3,400)*

lion in fiscal 2015, ended March 31. Ralph Lauren Corp. is one of the world's most successful design, marketing and distribution companies, with net revenue of \$7.6 billion in fiscal 2015 from a product portfolio that ranges from apparel to accessories to fragrances to home products like wallpaper and paint. Six years after its launch, Perramond says, RLWJ has positioned itself as the serious watch company that Rupert boasted about in 2009. It is now poised, Perramond says, to take advantage of some market trends that should seriously boost its watch business and increase its watch clout. (RLWJ sales data is not public. Richemont does not disclose sales by brand and Ralph Lauren Corp. does not disclose sales by product.)

Perramond was hired to help Lauren position the company for what amounts to Phase II. They have developed a strategy that Perramond calls "an evolution" for the company. In watches, RLWJ will significantly increase its presence in the \$2,000 to \$5,000 price segment. It will also greatly expand its women's offerings in this segment. True to its name, the company also plans to tap into a business that is three times larger globally than watches: fine jewelry.

Given the direction that Lauren wants to take, you can understand why he tapped Perramond, 53. Perramond brings a lot more to the Ralph Lauren party than Swiss watch industry acumen. He also has significant U.S. watch market experience (he launched the TAG Heuer brand here in 1988) and plenty of experience working with family-run jewelry and fashion brands at H. Stern and Hermès. What's more, he got his business education in the U.S., at the University of Pennsylvania's prestigious Wharton School. He is an unabashed fan of the American way of doing business ("risk-taking, forward-moving, let's-go-for-it," as he describes it) and all things American. One example: his wife is from Cape Cod.

Perramond made his reputation as one of a trio of watch outsiders who transformed the Heuer watch company into TAG Heuer. When the Franco-Swiss company Techniques d'Avant Garde Group acquired 52 percent of Heuer-Leonidas SA in 1985, it hired three consultants at Booz Allen Hamilton to do a strategic analysis of the company. The Ojjeh family that ran TAG was so enamored of the brand strategy that the trio – Christian Viros, Philippe Champion and Perramond – recommended that it hire them to run the company. In 1988, Perramond, then a tall (he's 6' 8"), skinny, 27-year-old, moved back to the U.S. as CEO of TAG Heuer's U.S. subsidiary. The three (Viros served as CEO in Switzerland; Champion was in charge of marketing for the company) turned TAG Heuer into a sales and marketing juggernaut. In 1992, Perramond moved to TAG Heuer headquarters in Switzerland, where he continued to oversee the U.S. market. In 1999, when LVMH acquired the brand, Perramond was named vice president of LVMH Watch & Jewelry.

Two years later, Perramond left LVMH to start a consulting business in the luxury goods field. That led to a position with Brazilian jeweler H. Stern as president of Europe and Asia, where he stayed for six years. In 2009, Perramond was named CEO of La Montre Hermès, the Swiss-based watch division of the Paris luxury goods producer Hermès. He nearly doubled



*Reverse view of the RL Automotive Skeleton watch showing Ralph Lauren's first openworked movement, RL Caliber 1967*

watch sales (to 167 million euros, or about \$184 million at current exchange rates) and boosted its watch bona fides by introducing proprietary movements and bringing case and dial production in house.

That background is coming in handy as Perramond develops business strategies with Lauren and the Swiss and American teams. His role, he says, is to make sure that both sides of the joint venture work in sync. "There are great assets on both sides," he says. "If you do it right, you leverage both sides. I can speak the Swiss watchmaking language and I can speak the fashion language. I understand both. And I can speak the American language."

**THE NEXT STEP** for RLWJ is to make what Ralph Lauren's company calls "the world of Ralph Lauren" accessible to more watch customers. "There is a great opportunity for us between \$2,000 and \$5,000," Perramond says. For two reasons. One is that Swiss brands for the most part have abandoned that price range. "Over time," he says, "prices have gone up and up and up and up, pushed by the pressure of Japanese consumers first, and then the Chinese, who could buy anything. But what hap-



*The RL Automotive Skeleton watch (\$50,000) with an Amboyna burl bezel inspired by the wood on the dashboard of Ralph Lauren's 1938 Bugatti Type 57SC Atlantic Coupe*

pened to loyal customers in the U.S.? They couldn't follow. Brands realize that they went too far with these price increases in the U.S. So now the local customers say, 'It's not for me.'"

RLWJ will target "the local customer," Perramond says, "American consumers who love prestige watches, signed by an iconic designer of high quality. That's where the business is. This is key for us to understand."

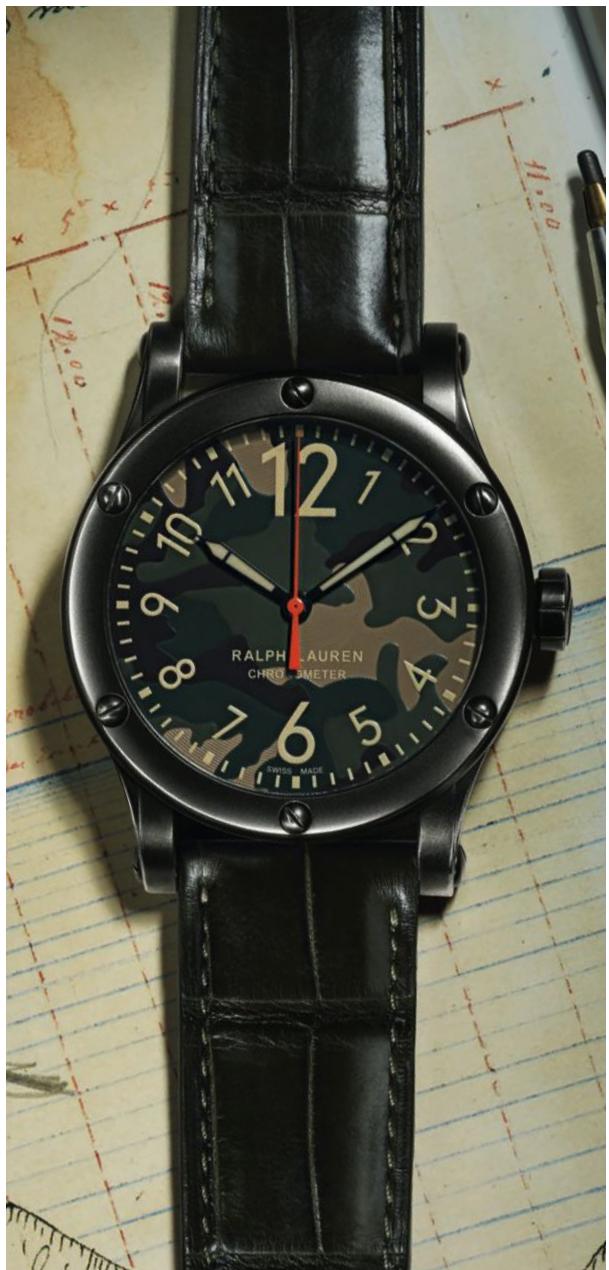
The other thing that Ralph Lauren understands, Perramond says, is the growing importance of women in the watch market, particularly in that price range. "The female market is the future," Perramond says. "The men's market is saturated. Everybody is playing in that field. The women's market may only be 35 percent of the total business, but there are very few players. And Ralph Lauren has a great following with women. The majority of our clients for the luxury collections are women. At the \$2,000 to \$5,000 price point, it's a self-purchase. There is no resistance. An independent professional woman is not afraid to spend \$4,000. So we have a huge opportunity here with women." Moreover, Perramond points out that there are not a lot of choices in that price category for women in the U.S. "Women are waiting for us. Literally."

Next year RLWJ will introduce more accessible Swiss-made watches for women and men. "It's still a prestige watch," Perramond says. "It's still luxury. To spend \$2,000 on a watch is not a small decision. For most people, it's a big decision."

The company can make this shift now, Perramond says, because it has established itself as a luxury watch brand of Richemont-caliber quality. In a world awash with inexpensive designer-brand watches sold in department stores (think Michael Kors, Donna Karan, Kenneth Cole, Giorgio Armani and a score more) produced under licensing deals, Ralph Lauren has managed to differentiate his watch brand from those. The Richemont joint venture enabled him to position it where he wanted: as a high-end watch, manufactured by the world's premier luxury watch group, a world away from the licensed fashion-watch brands.

"The strategy Mr. Lauren chose at the outset was right," Perramond says. "It's right to start at the top. To communicate that you stand for excellence, craftsmanship, quality, prestige and beautiful aesthetics. You show your values at the top and you build the image with extraordinary products, aspirational products, and it slowly builds credibility over time. It's an investment. It's a serious commitment to watchmaking."

The strategy was bold for a designer brand, and not everyone understood it. One example: when RLWJ launched a \$68,000 tourbillon watch with a Jaeger-LeCoultre movement, critics wondered why someone would buy an RL tourbillon watch for the same price as a JLC tourbillon. "It's true that we lack credibility compared to established watch brands," Perramond says. "At the same time, it's a pretty daring approach for Ralph Lauren to say, 'I only want to have excellence and I only want what's best.' If you think in conventional terms, it's disruptive. But it's not a mistake. If we want to emerge, we have to go against convention. That was one way to do it. We'll be more successful tomorrow with more accessible lines because we had this initial image that was imprinted on the people's minds. We are not another licensed brand. We are a genuine, high quality timepiece. That's the point of the joint venture."



*RL67 Safari Chronometer with a camouflage dial (\$3,800)*

**THAT DONE**, the brand can expand to other price ranges, Perramond says. "We have established ourselves at the top of the pyramid; now is the time to trickle down. We also need timepieces that will give access to people who want access to the world of Ralph Lauren. Not everybody has \$50,000 to spend on a watch. Or \$20,000. We need to reach out to a larger audience, to the people who say, 'I love this world and want to be a part of it.' This is the shift that is taking place.

"If you start at the top, at some point you have to offer more affordable products to create this virtuous circle. You create aspiration. And then by opening to a larger group of clients, you make the dream available. And you create revenues that will seed the development of the high end."

The high end remains the company's core business. "We will continue to offer a full range: the gold, the precious metals, the complicated movements, because you need this to create the aura, the craftsmanship, the beauty, the commitment to excellence. But you also need to give access."

*Ralph Lauren 867 watch with 3.43 carat diamonds*

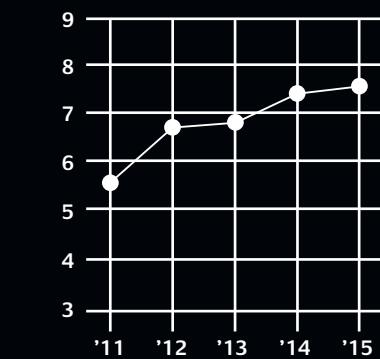


## A Joint Venture Between Giants

Ralph Lauren Watch & Jewelry Co. was created in 2007 as a 50-50 joint venture by two multi-billion-dollar businesses, the U.S. company Ralph Lauren Corp. and Switzerland's Richemont Group. Shown below are the revenues of both partners over the past five years.

### Ralph Lauren Corp.

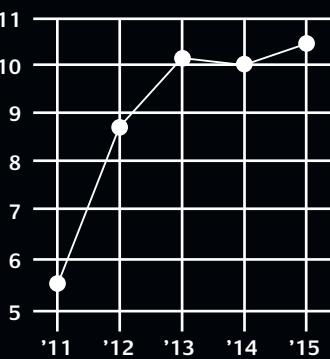
Revenue in \$ billions



For fiscal years ended March 31  
Exchange rate for fiscal 2015: €1 = \$1.27  
Source: Company annual reports

### Richemont Group

Revenue in € billions



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# WatchTime

THE WORLD OF FINE WATCHES



Women are a growing force in the watch market, Ralph Lauren says, and the company will increase its women's models.

RLWJ will continue to produce high-end mechanical products for men. But the watch business, which has been weighted toward men, will have more balance. "We'll offer timepieces for men that are distinctive because they are in the DNA of the brand, like the Safari and the Automotive watches," Perramond says. "We have a customer for products inspired by the DNA of the brand. So we need to try and surprise. But it won't be with conventional movements or complications. It has to be out of the box."

A good example, he says, is the RL Automotive Skeleton watch introduced at SIHH. Lauren is a well-known collector of cars and watches. One of his most prized automobiles is a 1938 Bugatti Type 57SC Atlantic Coupe, one of just four in the world. Lauren used design elements from the car in his design of the Automotive Skeleton. The bezel, for example, is made of Amboyna burl wood, which is used on the Bugatti's lustrous dashboard. Such a watch is unique to Ralph Lauren, Perramond says. The company will continue to create luxury watches for men based on "our own world," Perramond says. He mentions equestrian and nautical as other famous Lauren design themes that could inspire new men's watches. "There are many worlds at Ralph Lauren," he says. ○



Ralph Lauren's Stirrup Petite-Link watch with a Swiss quartz movement (\$2,500)



## The 'J' is for 'Jewelry'

There is more to Ralph Lauren Watch & Jewelry than just watches. In the future, probably much more. Jewelry was always intended to be an important part of the company's product portfolio. It introduced a fine jewelry collection in 2010. So far, though, the company has concentrated more on watches. But it has tremendous potential with women's jewelry, says RLWJ CEO Luc Perramond. "Jewelry today is a much more dynamic market than watches. The global jewelry market is three times the size of the watch market worldwide. And it's growing faster."

Moreover, the U.S., RLWJ's top market, is a monster jewelry market, representing 26 percent of global sales versus just 12 percent of global sales for watches. "What's driving the sales of many groups today is jewelry more than watches," Perramond says. "It is not saturated. There is a growing customer base – women – spending more and more."

What makes it even more tempting to RLWJ is that the fastest-growing segment of the market is branded jewelry. "Branded jewelry is about 25 percent of the market today," Perramond says. "They expect it to be 40 percent of the market in 2020. The momentum right now is in branded jewelry. So there is a natural route for us."

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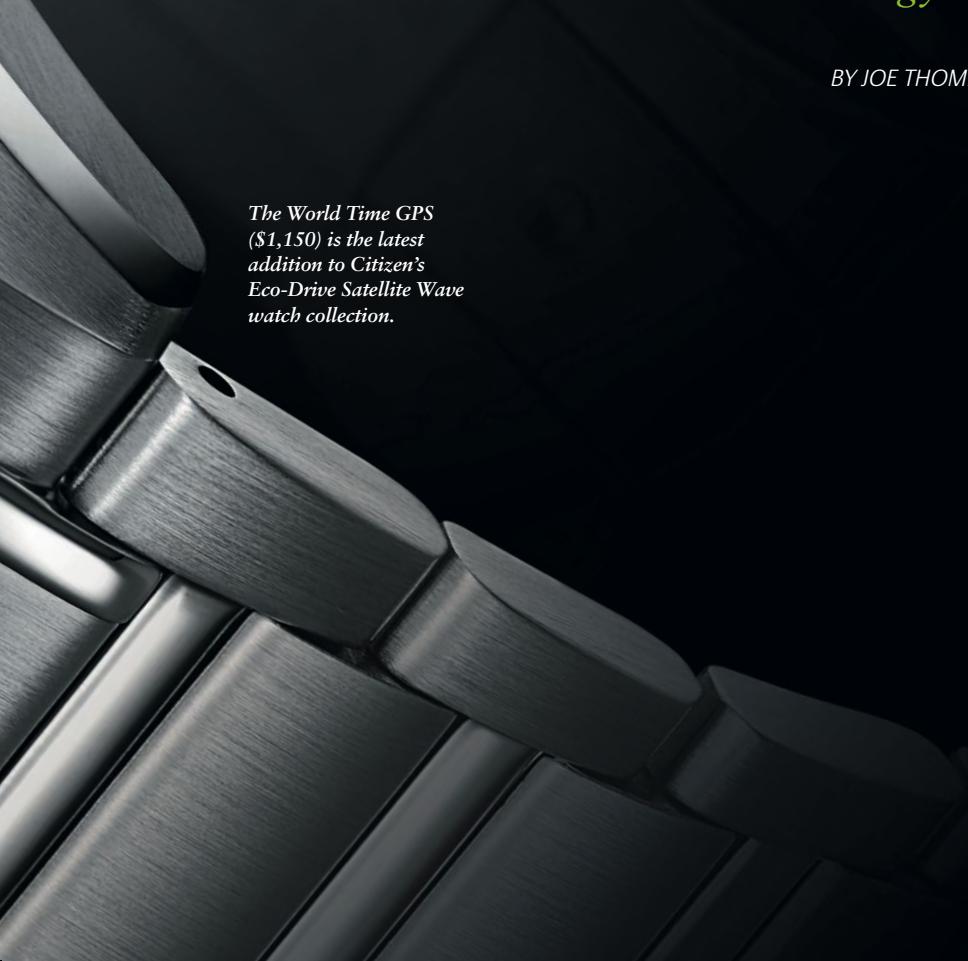


# WAVE ACTION

*Forget about smartwatches. At Citizen, Satellite Wave GPS technology is the next big thing.*

BY JOE THOMPSON

*The World Time GPS (\$1,150) is the latest addition to Citizen's Eco-Drive Satellite Wave watch collection.*



HIGH-TECH WATCHES  
*Citizen Satellite Wave GPS*

**Y**ou're forgiven if you haven't noticed. Over the past 18 months, while Apple dominated watch news in the run-up to and launch of its smartwatch, Japan's Citizen has quietly upped the ante on its own kind of "connected" watch.

The Citizen watches are not smartwatches. Citizen has no plans to make app-loaded, wearable devices like the Apple Watch or Samsung's Galaxy Gear. No, the next-gen high-tech watches that Citizen is banking on connect not to phones but to navigation satellites orbiting the earth twice a day 12,500 miles in space. Using Citizen's own technology, Citizen Satellite Wave GPS watches capture satellite signals to get ultra-accurate atomic time. (The satellite signals are controlled by atomic clocks, accurate to 1 second every 100,000 years.)

*Given clear access to the sky, Citizen Satellite Wave watches receive time signals with atomic-clock accuracy from GPS satellites in space.*



Satellite Wave GPS technology makes atomic timekeeping available no matter where you are on the planet. In the old days (like 2010), watches had to rely on signals from atomic clocks for such accuracy. That was fine if you were within receiving range of the signal from an atomic clock. Not so fine if you weren't.

In September, Citizen's latest Satellite Wave watch, the World Time GPS, arrives in the U.S. at a list price of \$1,150, its lowest price yet for watches with this technology. The World Time GPS is Citizen's second Satellite Wave watch to debut this year; the other, Satellite Wave F900, is the first chronograph in the series. They bring the Satellite Wave family to five. Plenty more such watches are on the way, says Jeffrey Cohen, president and CEO of Citizen Watch Co. of America.

Citizen is a quartz-watch giant. Timepieces accounted for more than half of the Citizen Group's total sales of 328.4 billion yen (\$2.74 billion) last year. It has been making watches since 1924, but it rose to international prominence in the 1970s and 1980s on the strength of its mastery of quartz-watch technology. It pioneered innovations like Eco-Drive, launched in 1976, which uses natural or artificial light to recharge the watch's battery, and radio-controlled atomic timekeeping launched in 1993. Satellite Wave technology, Cohen says, is Citizen's next big thing. "We believe this is a game changer in timekeeping. We are at the beginning stages of a whole new future for this company," he says.

Recently WatchTime met with Cohen and COA Vice President of Marketing Ellen Seckler at COA headquarters in Lyndhurst, N.J., to learn what Citizen is doing with Satellite Wave GPS technology, why it is doing it and why it is so bullish about it.



*Citizen's first Satellite Wave chronograph watch, the F900, comes in non-limited (\$1,995, left) and limited (\$2,400, right) editions.*

**CITIZEN PURSUED** Satellite Wave technology as an extension of its work with radio-controlled atomic timepieces. Citizen was the first Japanese watchmaker to begin researching the field in 1989. It developed Japan's first standard radio signal reception integrated circuit. That led to its launch in 1993 of the world's first multi-band, radio-controlled atomic timekeeping watch. Today Citizen's AT (atomic timekeeping) watches, priced from \$600 to \$900, are a core product for the company.

For all the benefits of AT watches, they have one big weakness: they are useless in much of the world. Wristwatches rely on standard radio waves received from five atomic clocks around the world: two in Japan and one each in the U.S., Germany and China. That's not enough to cover the planet.

Satellite Wave technology solves that problem because satellite signals are global. "We weren't going to start building atomic clocks all over the world," Seckler says with a smile. "This seems a lot easier." As long as the wearer has access to the sky, a Satellite Wave GPS watch is able to receive the timekeeping signal, no matter where on earth he or she is. Citizen makes it clear that in most instances the watch must be outdoors to receive satellite signals. For local time

and calendar updates, the watch needs to get a signal from one of the 24 to 30 satellites that are operational at any given time. (To update time in a second time zone requires signals from four or more satellites.) Even outdoors, reception can be inhibited by tall buildings or trees, Citizen says. Indoors, "reception might be successful through a window," company literature states, "depending on the type of window glass, buildings or trees next to the window, etc."

**THERE WERE NO GPS CHIPS DESIGNED TO DISPLAY THE CORRECT TIME IN WATCHES, SO CITIZEN DEVELOPED ITS OWN.**

## Citizen Satellite Wave GPS

Citizen began working on Satellite Wave technology in the last decade. There were no GPS chips designed specifically to display the correct time in watches, so Citizen developed its own. After several years of research, in 2011 Citizen launched the world's first watch able to sync with satellites to get the time, day and date. Called Satellite Wave, the watch featured a Citizen Eco-Drive caliber, H990, with a perpetual calendar regulated by satellite signals and accurate to the year 2100 and world time in 26 time zones. The watch had a 48-mm case made of ceramic and stainless steel with diamond-like coating. Citizen produced 990 of the watches, priced at \$3,800. Eco-Drive Satellite Wave was big and pricey. But it was a world first. And, thanks to algorithms Citizen developed to speed up the reception of data from GPS satellites, the watch got the signal in as little as 6 seconds, a faster reception time than AT watches synced to earth-bound atomic clocks. It was a start.

At the time, it was not clear where Citizen was headed with Satellite Wave technology. The next year, the company made news with a watch having a totally different new technology. Called Proximity, it was the world's first analog smartwatch. Priced at \$495, it uses Bluetooth technology to connect to iPhones to receive alerts for e-mails, phone calls, scheduled events and more.

The following year, 2013, Citizen unveiled a second Satellite Wave watch. Satellite Wave-Air improved on the Satellite Wave watch. The most striking feature was its titanium case, made of Super Titanium, a material developed and patented by Citizen. (In Super Titanium, a surface hardening process called Duratect makes titanium, notoriously soft, five times harder than stainless steel.) The original Satellite Wave



*The Citizen Eco-Drive Satellite Wave (2011), with a ceramic dial, was the world's first watch to sync with satellites in space.*



*The titanium-cased Satellite Wave-Air (2013) was the first all-metal-case watch with Citizen's Satellite Wave technology.*

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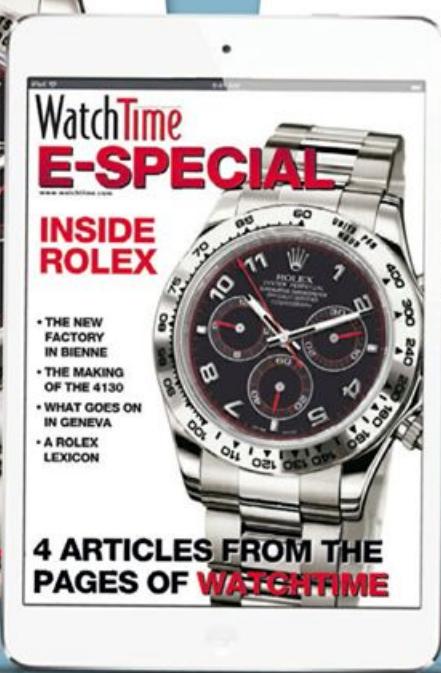


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## Citizen Satellite Wave GPS



## SPECS

## CITIZEN ECO-DRIVE SATELLITE WAVE WORLD TIME GPS

**Manufacturer:** Citizen Holdings Co., Ltd., 6-1-12, Tanashi-cho, Nishi-Tokyo-shi, Tokyo 118-8511, Japan

**Reference number:** CC3005-85E

**Functions:** Hours, minutes, seconds, day, date, world time in 40 time zones, daylight saving time indicator, perpetual calendar accurate to the year 2100, power-reserve indicator, light-level indicator

**Movement:** Eco-Drive Caliber F-150 with solar charging, satellite timekeeping system with worldwide reception, accuracy of +/- 5 seconds per month without satellite reception, power reserve = 2 years (7 years in power-save mode)

**Case:** 316L stainless steel, water resistant to 100 m, nonreflective sapphire crystal

**Bracelet:** 316L stainless steel

**Dimensions:** Diameter = 43.5 mm, thickness = 13.2 mm

**Price:** \$1,150

used a ceramic case because a metal one would interfere with the satellite signal. For the Wave-Air, Citizen redesigned the antenna, making it smaller and stronger so that it could receive signals through metal. Plus, the new antenna helped cut the reception time from 6 seconds to 4. One drawback of the watch was that it was huge, 50 mm in diameter. One benefit was that it had the same functions as the original Satellite Wave, but was \$1,300 cheaper, at \$2,500.

Last year, Citizen made Satellite Wave technology more mainstream when it launched the Satellite Wave F100 watch. It was the smallest (it has a 45-mm Super Titanium case), quickest (signal reception in 3 seconds), thinnest (12.4 mm high) and cheapest (\$1,800) Satellite Wave watch yet. Design-wise, it is simpler and cleaner than the highly technical-looking, geek-chic Satellite Wave and Wave-Air.

F100 has three other notable features. Its accuracy when not receiving a signal is +/- 5 seconds per month, down from +/- 15 seconds per month for its two Satellite Wave predecessors. Its world-time function gives times in all 40 global time zones, not 26. And it has a light-level indicator, a first for any Eco-Drive watch. It lets the wearer know if the watch is getting enough light to charge the battery. It measures the intensity of light striking the dial and indicates the amount of electricity that light is generating at that moment.

**THIS YEAR CITIZEN** expanded the family with two new watches that build on the F100. One is the first Satellite Wave chronograph. The other is a steel-cased descendant of the F100 that is far more



## SPECS

## CITIZEN ECO-DRIVE SATELLITE WAVE F900

**Manufacturer:** Citizen Holdings Co., Ltd., 6-1-12, Tanashi-cho, Nishi-Tokyo-shi, Tokyo 118-8511, Japan

**Reference number:** CC9005-58E (black dial), CC9001-74A (white dial)

**Functions:** Hours, minutes, seconds, day, date, 24-hour chronograph times to 1/20-second, GMT with simultaneous dual time display, world time in 40 time zones, perpetual calendar accurate to the year 2100, power-reserve indicator, light-level indicator

**Movement:** Eco-Drive Caliber F900 with solar charging, satellite timekeeping system with worldwide reception, accuracy of +/- 5 seconds per month without satellite reception, power reserve = 1 to 5 years (5 years from full charge in power-save mode)

**Case:** Proprietary Super Titanium with Duratect diamond-like carbon treatment, water resistant to 100 m, nonreflective sapphire crystal

**Bracelet:** Super Titanium

**Dimensions:** Diameter = 46 mm (black dial), 44 mm (white dial), thickness = 13.1 mm

**Price:** \$2,400 for limited edition of 1,700 pieces (black dial); \$1,995 (white dial)

affordable, at \$1,150. (With standard discounts, it will sell for under \$1,000.)

The chronograph is called the Satellite Wave F900. It has a Super Titanium case and bracelet and comes in a limited edition (1,700 pieces total) priced at \$2,400. There is also an unlimited edition that has a slightly smaller case (43 mm; the limited version is 45 mm) and is priced at \$1,995. The F900 is Citizen's most technically sophisticated Satellite Wave watch. It has all the features of the F100, including the 3-second signal reception speed, and more. The chronograph in its Eco-Drive Caliber F900 measures to 1/20-second for 24 hours. It shows the time in two time zones simul-

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## WATCH TO WATCH



**Ulysse Nardin Big Unit Chronograph**  
Baseball pitching legend Randy Johnson — the 6'10" World Series champ famously nicknamed "The Big Unit" — is a longtime collector of watches and a big fan of Ulysse Nardin in particular. Johnson ... [Read More...]

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Citizen Watch Co. of America CEO Jeffrey Cohen

taneously and can switch between them instantly. The hands are driven by new high-speed, twin-coil motors that Citizen designed specifically for multi-function watches. The motors spin the hands extremely fast both clockwise and counterclockwise, enabling quick setting of the time and time-zone changes.

It also has a new GPS function that offers two options for receiving signals for time/calendar updates. For your current time zone, you receive a signal from

*The Citizen Proximity (2012) was the world's first analog smartwatch, using Bluetooth technology to link to iPhones.*

one satellite in as little as 3 seconds; the maximum waiting time is 30 seconds. For the second time zone, you receive signals from four satellites in as little as 30 seconds; the maximum time is 2 minutes. (See "How It Works" sidebar.)

The second new watch, the Satellite Wave World-Time GPS (Citizen also calls it the F150, referring to its caliber number), also has all the timekeeping attributes of the F100, but at an eye-catching price. With a case made of stainless steel instead of titanium, it is \$650 cheaper than the F100. Falling below the \$1,000 price barrier is significant, Cohen says. In four years, Citizen has reduced the opening price of its Satellite Wave watches by 70 percent. "This technology is part of our DNA now and we're going to bring it to the world. With a much more affordable price point, we reach a broader market of watch enthusiasts. We think that's key."

Citizen's strategy is to create a new category of ultra-precise, ultra-fast, satellite-synced watches (it is working on cutting the reception time to 2 seconds) that work everywhere in the world. Citizen's goal is to be a dominant force in this market. So far its only competitors in the field are its Japanese rivals Seiko and Casio and Germany's Junghans. The Swiss watch industry has ignored the technology. The "Wave GPS" category, as Citizen will call it to differentiate it from its AT series, will be priced roughly from \$900 to \$2,000 and positioned just above its AT watch family. The two families will not overlap in price.

The Wave GPS family will grow, Cohen says. "From this point on, this will be part of our way of approaching the market." On the drawing board, for example, are women's models. "We have to get the antenna size down even more but not affect the accuracy or reliability of the signal," Cohen says. "And we have to get the watch down to at least 39 mm before it is right for her. Design obviously plays a crucial role here. Those are things we're working on."

**CITIZEN WILL PROMOTE** the Wave GPS category heavily. COA routinely ranks among the top five watch advertis-



*Citizen's Satellite Wave F100 (2014) received satellite signals in as little as 3 seconds, a new record.*

ers in the U.S., according to Kantar Media. Kantar estimates COA spent \$23.6 million on advertising last year. The company's total marketing budget, with sponsorships, events and brand ambassadors, is four times that, Cohen says.

Citizen believes Wave GPS watches appeal to the growing number of people globally who travel for work or leisure. "The world is becoming smaller," Cohen says. "Lifestyles are changing. People are traveling more, spending more time in different parts of the world, and they expect more. They need to be on time. This technology fits how they live today."

Ironically, he says, not so many watch firms are touting the merits of precision timekeeping these days. He notes that the watch industry is at an unusual moment in its history. The celebrated Swiss industry cannot offer wristwatch accuracy because it relies overwhelmingly on a centuries-old, inherently inaccurate technology. And the smartwatch newcomers offer phone-linked "watches" with a menu of features and benefits that have nothing to do with the time or timing. What's more, their battery life is mere hours if you use the various apps, and the watches are designed for speedy obsolescence.

Cohen points out that Citizen took a pass on smartwatches after developing its own technology for them. "We had a smartwatch in 2012 when we introduced



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THE WORLD OF FINE WATCHES

Proximity," he says. "We brought Bluetooth technology to the market before anybody." At Citizen, however, the priority is horology. "We produced a beautiful watch for \$495 and offered some other bells and whistles. The connected stuff was just gravy," Cohen says. Proximity remains part of the Citizen collection and is regularly updated with the latest iOS and other advances. (For more on Proximity, see "Counter Sync," WatchTime's test of the watch in the June 2013 issue.)

Technologically, though, Cohen says, "We moved on from that. That's old technology, the way we see it. We believe smartwatches are gadgets and we're not going into the gadget business. There is certainly room for them as a new pillar for wearables in the watch business. But we're not going down that road. Those experiences are different from watches and watch timing. We're a timing technology company."

Wave GPS watches, he says, "are our smartwatches. This is how we're going to be smart. We're not a smartwatch. We're smarter than that. We have a light-power-driven, thinnest, fastest, most accurate Satellite Wave GPS watch in the world. That's smart technology."

With the arrival of the Apple Watch, he says, "people talk about watch technology a little bit differently today. They are talking more about bells and whistles and one-offs and making different types of connections with the consumer. People are forgetting what a timepiece is used for."

Cohen says Wave GPS technology is a timely reminder of what a watch is. "There is an expectation that your watch should be accurate. It should have the right time."

And, he says, it's a reminder of what a watch company is. "Satellite technology is part of Citizen's core competency, part of our DNA," he says. "It brings attention to who we are as a company: a watch company for people who want to know what time it is. Wherever you are, you're going to be on time." Amidst the smartwatch din, Cohen is banging the drum about watches that get the most accurate time on earth from satellites in space. Says Cohen, "That's huge." ○

## HOW IT WORKS: SETTING THE SATELLITE WAVE F900

The Citizen Satellite Wave F900 chronograph watch uses GPS satellite signals to update the time in the local time zone and a second time zone. Here's how to use it, based on information in Citizen's instruction booklet.

To set the time in the local time zone:

- Set the mode hand in the subdial at 3 o'clock to the time mode (TME). To do that, pull out the crown one click and turn it; the subdial hand will move from mode to mode.
- Be sure the watch is set for your current time zone. With the watch in TME mode, pull the crown out two clicks. The seconds hand rotates to indicate the local time zone. Now push the crown in two clicks to the closed position.
- Press and hold the lower right pusher for 2 to 3 seconds, then release. The seconds hand will rotate to the RX-TME reception indication at the 52-second position on the dial. Signal reception now begins; it takes from 3 to 30 seconds.
- Position the watch so that it is away from your body and the dial is directed towards an unobstructed view of the sky. It's best to have the dial pointed straight up, rather than at an angle to the sky. "Signal reception will normally be successful outdoors in areas in which there is a clear view of the sky," Citizen says. "Some factors that affect signal reception are proximity to structures, tall buildings, airports, military facilities, trees, electrical interference and atmospheric conditions."
- If the watch receives the signal, the time and calendar, including leap year, is updated, and the seconds hand will rotate to the OK indication at the 3-second position on the dial. Normal timing resumes after 2 seconds.
- If the update is not successful, the seconds hand will rotate to the NO indication at the 57-second position on the dial.



The procedure for setting time in a second time zone is similar. The second time zone is shown on the 24-hour subdial at 6 o'clock.

- Be sure the watch is in TME mode indicated in the subdial at 3 o'clock.
- With the crown closed, press and hold the upper right pusher for 2 to 3 seconds until the seconds hand moves to the RX-GPS indication at the 8-second position on the dial, then release the pusher. (GPS is Citizen's designation code for the second time.) Note that the seconds hand will first rotate to indicate the current time zone, making a full revolution, and then move to the RX-GPS indicator.
- Signal reception now begins. Upon a successful connection, the seconds hand will rotate and point to the GPS-detected time zone on the scale around the perimeter of the dial for 2 seconds. Then the time and perpetual calendar will be updated within 2 minutes. Under ideal conditions, the process will take just 30 seconds. Normal timing operation will then resume.
- If the update is not successful, the seconds hand will rotate to the NO indicator at the 57-second position on the dial. Normal operation will resume after 2 seconds.

Note that you can also set the time and perpetual calendar manually.

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[Omega Speedmaster "Dark Side of the Moon"](#)

Since its 1957 debut, Omega's Speedmaster "Moonwatch" had sported a tricompax dial arrangement. In 2011, Omega outfitted the watch with a new co-axial movement and bicompass design, both of which are used again in the first Moonwatch with a black ceramic case.

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[Panerai Luminor 1950 Regatta 3 Days Chrono](#)

Panerai has been involved in yacht racing since 2005; it was probably inevitable that the brand would eventually release a watch for yachtsmen. That timepiece, which contains a brand-new movement and carries the reference number PAM00526, makes its debut this year.

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[Ulysse Nardin Marine Chrono Manufacture](#)

Ulysse Nardin's journey toward more in-house movement production continued apace at this year's Baselworld, when the brand released its new Marine Chronograph Manufacture.



[Patek Philippe Unveils New Calatravas](#)

At this year's Baselworld, Patek Philippe introduced the new Ref. 5227, a new version of its classic Patek Philippe Calatrava watch in a slightly larger case and a new, hinged dustcover over the exhibition caseback.



[10 Celebrity-Branded Sports Watches](#)

Many celebrities serve as "brand ambassadors," but only a few become involved in the process of creating their own personalized timepieces. Here are 10 famous-name watches from seven brands.

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# THE RANGER RIDES AGAIN

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*Tudor's Heritage Ranger harks back to a watch launched a half century ago. Does it stand the test of time?*

BY MARTINA RICHTER

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TUDOR  
GENEVE

ROTOR  
SELF-WINDING

CLOSE-UP

## Tudor Heritage Ranger



OKPHOTOGRAPHY

*The dial and crown both bear the Tudor rose, the brand's former emblem.*

# T

he Tudor Heritage Ranger, introduced last year, was modeled on a Tudor watch launched in the 1960s, the Tudor Oyster Prince Ranger. Like that watch, it has a matte black dial, large Arabic numerals and an eye-catching hour hand shaped like an arrowhead.

Unlike other members of Tudor's Heritage collection, which consists of models inspired by Tudor watches from the past, this one has painted dial markers, not applied ones. They bear Super-LumiNova tinted in a warm tone that imparts a handsome, aged look to the watch.

The rose emblem, at 12 o'clock, is also a nod to the past. A symbol of England's royal Tudor family, the rose appeared on Tudor dials from the 1930s until 1969, when a shield emblem took its place. The crown also bears the Tudor rose.



*A Tudor Oyster Prince Ranger from 1967*



*The Super-LumiNova glows bright green in the dark.*

The case, 41 mm in diameter and made of satin-finished steel, is water resistant to 150 meters. Its construction makes a sleek and simple impression. The straight middle section of the case descends to a solid, screw-in back and rises to a narrow bezel that slopes gently downward toward its outer periphery. This bezel architecture enhances the effect of the convex sapphire crystal, which covers a slightly domed dial.

The watch is easy to read in all lighting conditions. The Super-LumiNova glows a bright green in the dark. In daylight, the dial's strong contrasts guarantee ideal legibility. The hands are well proportioned with respect to each other and in the context of the whole dial.

The screw-down crown is inserted into a satin-finished tube that protrudes from the side of the case. The tube gives the

*The watch is powered by the ETA 2824-2, shown here after we removed the caseback.*





The watch is available with a steel bracelet, leather bund strap or standard leather strap. All versions come with an additional camouflage strap.

watch a technical look and enhances its wearing comfort. It practically leaps toward you when you grasp it to wind the mainspring. If you pull it out all the way to set the hands, you'll scarcely notice as it passes through its middle position, which in a watch with a date display would be used to set the date. Because this watch doesn't show the date, you simply ignore the middle position. When you screw the crown shut again, an internal spring provides just the right amount of resistance.

The watch is powered by an ETA 2824-2. On our timing machine, it gained an average of 2.6 seconds per day when fully wound. After 24 hours without winding, the watch lost an average of 2.7 seconds per day.

The bracelet is affixed to the case by means of crosspieces inserted into holes that were bored all the way through the lugs. These holes are one of Tudor's distinguishing features. In addition to the steel bracelet of our test watch, which looks very much like the bracelet of the Tudor Oyster Prince Ranger, the watch is also available with a leather bund strap or a standard leather strap. The steel bracelet and both leather straps have satin-finished folding clasps that incorporate components shaped like the Tudor shield symbol. Each version of the watch comes with an additional fabric camouflage strap. ○

## SPECS

### TUDOR HERITAGE RANGER

**Manufacturer:** Montres Rolex SA, Rue François-Dussaud 3-7, CH-1211, Geneva, Switzerland

**Reference number:** 79910

**Functions:** Hours, minutes, seconds

**Movement:** Automatic Caliber 2824, based on the ETA 2824-2; 28,800 vph; Glucydur balance; 25 jewels; Kif shock absorption; Triovis regulator; power reserve = 38 hours; diameter = 25.6 mm; height = 4.60 mm

**Case:** Satin-finished steel, convex sapphire crystal, screw-in caseback and crown, water resistant to 150 m

**Bracelet and clasp:** Satin-finished steel bracelet, folding clasp, comes with additional fabric camouflage strap

#### Rate results:

Deviations in seconds per 24 hours (Fully wound / after 24 hours)

Dial up	+5.9 / +1.6
Dial down	+4.3 / -1.0
Crown up	+3.0 / -4.3
Crown down	+1.1 / -2.2
Crown left	-1.4 / -7.5
Greatest deviation of rate	7.3 / 9.1
Average deviation	+2.6 / -2.7

#### Average amplitude:

Flat positions	318° / 293°
Hanging positions	289° / 257°

**Dimensions:** Diameter = 41 mm, height = 12.18, weight = 156 g

**Variations:** With leather bund strap or standard leather strap (\$2,825)

**Price:** \$2,950

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# G Wizards

*Inside the high-tech facilities where  
Casio makes its G-Shock watches*

BY CRAIG HAWES



IO

Premium  
Production  
Made in YAMAGATA



*The Premium Production Line in Casio's Yamagata factory assembles the company's more expensive watches, including the most complex G-Shock models.*

S

*A trio of GPW-1000 G-Shock models*



ince its emergence in 1983 at the height of the quartz revolution, Casio's G-Shock has developed a global cult following. The watch is multifunctional, affordable, dependable and able to withstand a vast repertoire of extreme physical and meteorological abuse. Special-forces soldiers all over the world have adopted it as their timepiece, and it is worn by everyone from emergency service personnel to extreme-sports enthusiasts.

To witness the technology that goes into manufacturing G-Shock watches requires a visit to two key sites in Japan. One is the Hamura Research and Development Center in Hamura City, on the western outskirts of Tokyo. The other is Yamagata Casio, the main factory, in the forested hills of Yamagata Prefecture, to the northeast of Tokyo. That's where Casio makes its most expensive collections, including the higher-end G-Shock models and Edifice.

I spent the first full day of my Casio visit at the Hamura site, where the staff was eager to talk us through two recently launched products. One was a world first: a hybrid timekeeping system that uses both Global Positioning System

(GPS) and Casio's radio technology, known as Multi Band 6.

This duo technology is incorporated in a model called the GPW-1000. At the Hamura factory we were given a demonstration of its ease of use in the bland surroundings of an outdoor parking lot. Configuring the GPW-1000 should preferably be done outside and in an open space. The watch can take up to 13 minutes to pick up a signal, I was told, but the unit I was given to test set itself in a little over a minute. You can also manually switch time zones if you are in an area that can't pick up the signal. It's hard not to be impressed when you see the hands move unaided to precisely the right time.

The GPW-1000 is powered by solar energy and, according to Casio, takes 27 hours of direct light on the watch face's

solar panel to charge it from zero to 100 percent. Eight minutes of direct sunlight will keep it going for a full day, while a full charge should last around seven months.

The names of 27 cities in different time zones are shown on the edge of the dial. Scratch-resistant sapphire protects the watch face, while the resin strap is reinforced with carbon fiber, a combination that Casio has done a great job with aesthetically. The watch is comfortable to wear and far lighter than it looks, weighing in at 126 grams, which is about 100 grams lighter than your average Audemars Piguet Offshore Royal Oak. At 58.6 mm in diameter, however, the watch is a wrist-eclipsing monster.

The two subsidiary dials on the left side of the watch face show the time for a second city – a useful function for the

**I WAS INVITED TO TEST THE SHOCK ABSORBENCY OF ALPHA GEL BY THROWING AN EGG AT IT.**



*Casio's most highly trained  
technicians work in the  
Premium Production line.*



*Testing for water resistance*

frequent flyer – while on the right side, an inset dial with an arrow indicates what day of the week it is. The date window is neatly sandwiched between the 4 and 5 o'clock indexes.

An “airplane mode” option prevents the watch from receiving signals when in flight (which could get confusing if you’re traveling great distances). The radio-signal towers are in the U.S., U.K., Japan, Germany and China. Some regions of the world are too far away from a tower to pick up a signal. Fortunately, GPS is available everywhere.

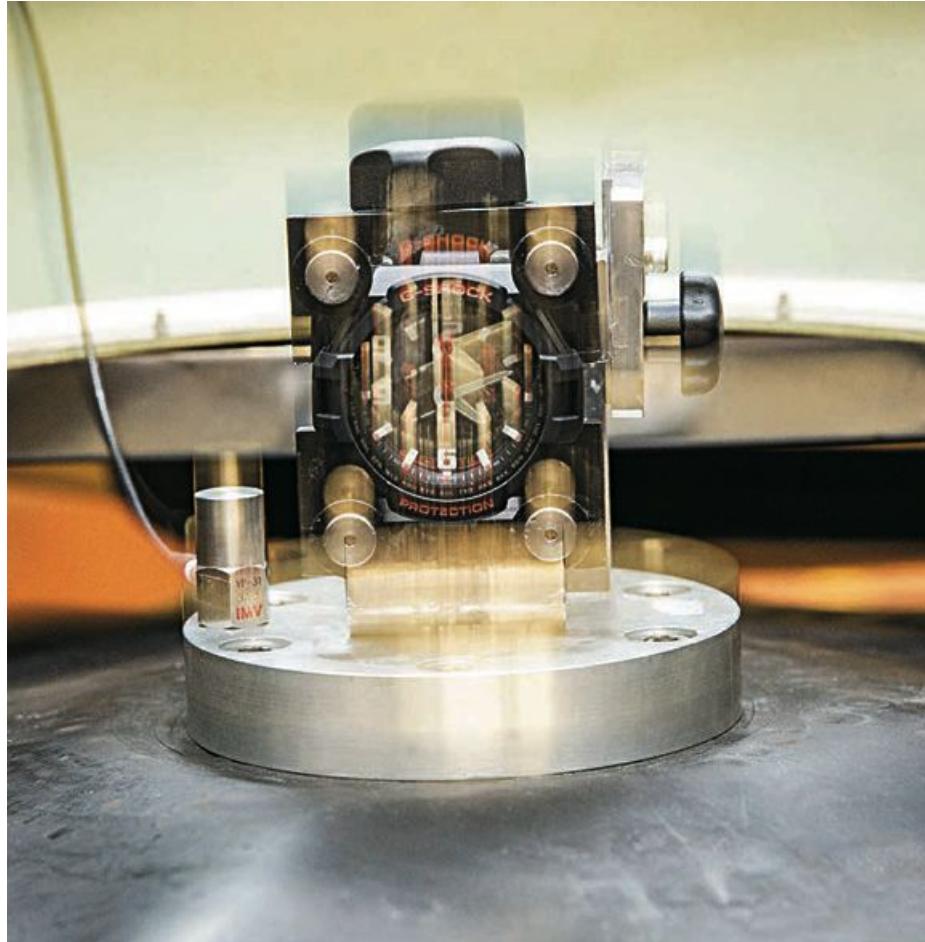
**THE OTHER COLLECTION** that Casio showcased during my visit was the MT-G-S1000 Metal Twisted collection, the king of the G-Shock family. Retailing between \$900 and \$1,400, it is where the G-Shock tops out price-wise.

What you get for the extra money is superior materials and enhanced comfort plus the hybrid technology found in the GPW-1000. The four-layer dial is striking and gives the watch an impressive

*An MT-G-S1000 Metal Twisted G-Shock*

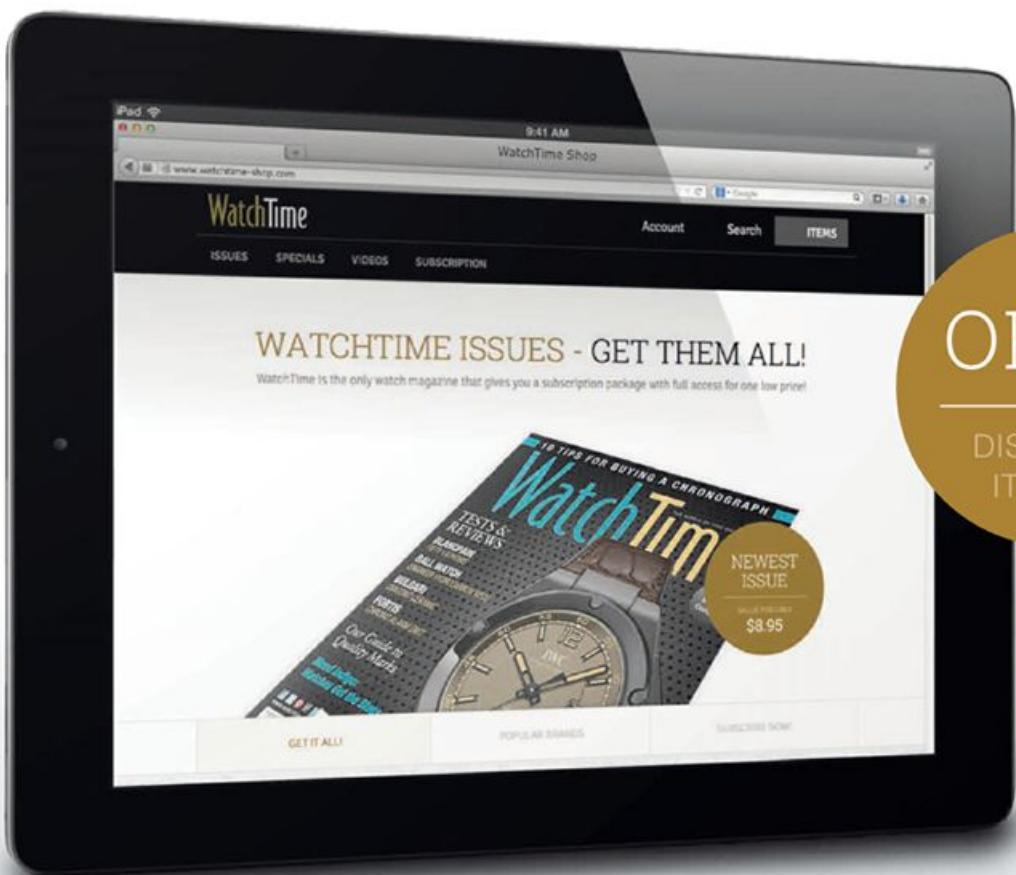


*The vibration test being performed on a G-Shock*



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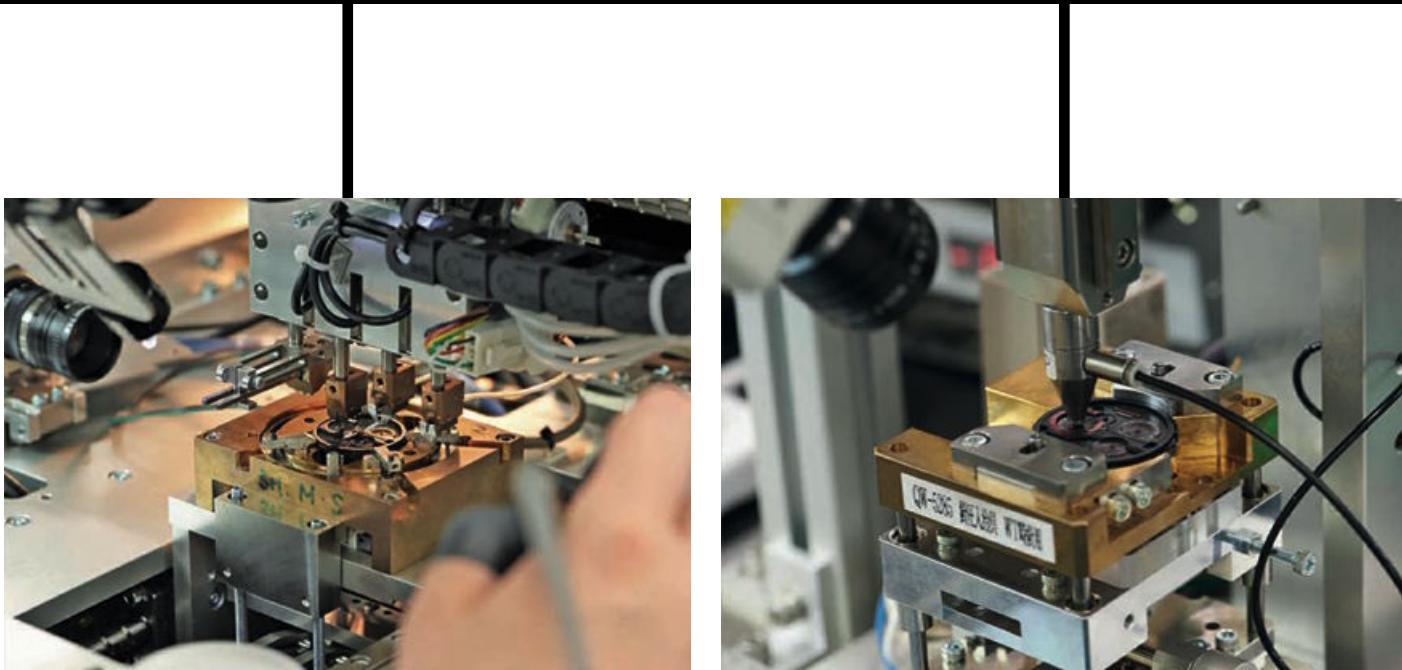
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*Most of the assembly is performed by small robots, made by Casio itself and monitored by cameras.*

depth. It utilizes the very demanding “sallaz” polishing technique, which gives metal a brilliant, mirror-like finish.

The next day at the Yamagata factory, three hours away by bullet train, I was invited to test the shock absorbency of the gel that is inserted in the case of this model (Casio calls it Alpha Gel). A section of gel the size and thickness of a doormat was placed on the floor and I was invited to throw an egg at it. After several vigorous throws, the egg remained completely intact. And then, perhaps getting carried away, I completely missed the rectangle of gel and the egg exploded, covering everyone’s shoes in yolk – not my finest moment in a watch factory.

A special version of this watch is the MT-G-S1000BS, which makes even more of a statement. Its gold-burnished case gives a vintage, mottled patina to a thoroughly modern-looking watch. It was manufactured in a limited edition of 500 pieces.

It is somewhat ironic that G-Shock has come to be regarded as a military watch. It was not originally designed as such. Kikuo Ibe, the creator of the first G-Shock, merely wanted to create a watch that would be hard to break. He had been upset as a youngster when he’d dropped, and broken, a watch given to him by his parents. Wanting to make a resilient timepiece that would stay intact

after being dropped from a substantial height, Ibe tested prototype after prototype, throwing them from the third-floor window of his apartment and from a bathroom at the Casio factory, but they all broke.

One day, after seeing a small girl bounce a rubber ball, he got the idea of dissipating exterior shocks by “floating” the movement inside the watch case, with support at just a few points. This idea remains at the nucleus of all G-Shock watches today.

Ibe never imagined the watch would have such broad appeal: he thought it would be worn primarily by road workers who didn’t want their watches getting scratched when they were knocked around. He admits to being bemused by G-Shock’s continued success and longevity. “I never would have believed it would be so popular and that I’d be speaking to journalists about it 30 years later,” he said.

Casio is proud of the brutal barrage of tests every G-Shock is put through

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*Kikuo Ibe, father of the G-Shock*

before leaving the factory and a highly entertaining hour can be spent witnessing several of them.

Take the mallet test, for example. It entails a watch being smashed off a pedestal by a swinging brass mallet that could easily pulverize a coconut. There's also a drop test, in which a purpose-built machine repeatedly hurls a watch to the floor; a strap-stretching test, which leaves no doubt as to the incredible strength of the carbon-fiber-reinforced straps; and a water-plunge test (G-Shocks are water resistant to 200 meters).

For pure visual spectacle, however, you can't beat the vibration test. Here, a watch is attached to a deafening machine that replicates a pounding pneumatic drill, vibrating so quickly at one point that the rapid taps turn into a consistent hum. At its fastest speed, the watch appears not to be moving at all. The watches subjected to these tests came through unscathed and without losing time.



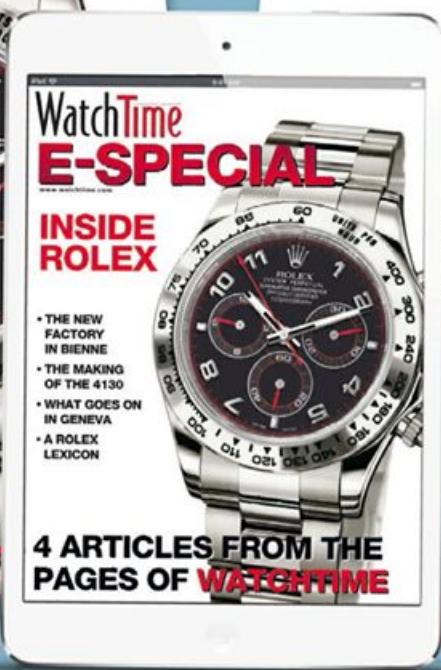
*Workers wear head-to-toe “clean” uniforms and antistatic bracelets that ground them to prevent static electricity from discharging into the watches.*

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*A major task of the technicians is checking the work of the robots.*

*A stretching test to check the strength of a carbon fiber-reinforced G-Shock strap*



At the factory we were also introduced to the company's vertically integrated production system and the concept of *monozukuri*. In its simplest form, the word translates as "making things," but it is infused with a deeper meaning of skilled craftsmen putting their heart and soul into their work, striving for perfection.

Resembling nuclear scientists in our blue overalls, boots and masks, which minimize the spread of dust, we were taken on a comprehensive tour of the assembly lines that make Casio's G-Shock and Oceanus ranges. Having visited mechanical-watch factories where components are assembled mostly by hand, I was expecting the extreme opposite at Casio – minimal human interaction and deafening noise from machines churning out a thousand watches an hour. But while it lived up to expectation, I was surprised by the number of people checking and re-checking



the watch movements at various stages in the production cycle, sometimes with the aid of a microscope, sometimes via close-ups on a computer monitor.

Surprisingly, several models are actually hand polished, which was heartening to see amid the mass of machines.

Perhaps realizing the appeal of seeing the production processes up close, Casio has announced plans to expand the factory and open it to the general public. Soon everyone will be able to see Casio's *monozukuri* first hand. ○

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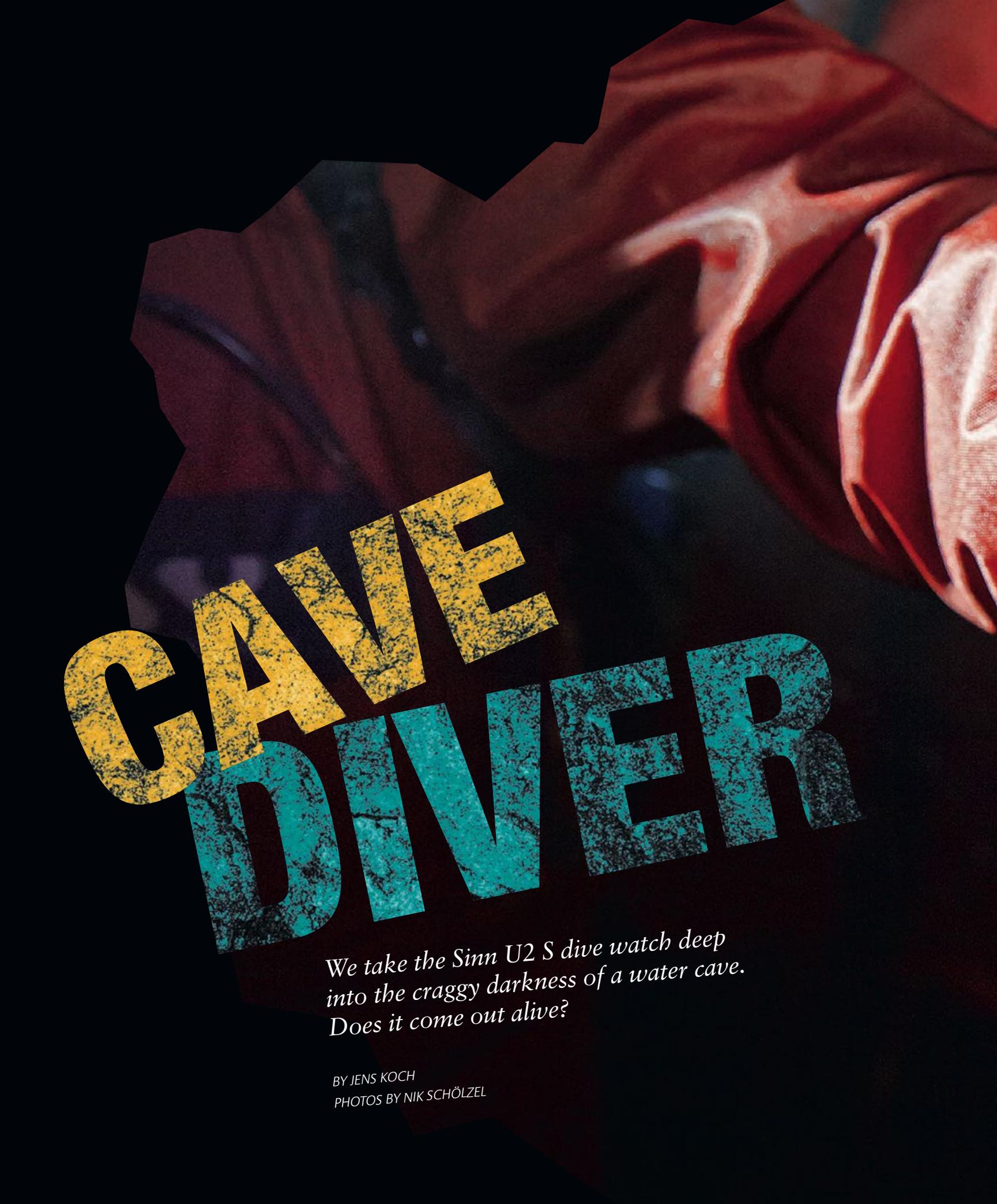
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# CAVE DIVER

*We take the Sinn U2 S dive watch deep  
into the craggy darkness of a water cave.  
Does it come out alive?*

BY JENS KOCH  
PHOTOS BY NIK SCHÖLZEL





aves are dangerous places. Spelunking technology has advanced, but the risks associated with cave exploration remain. Before our team of explorers can navigate Falkenstein cave, the longest cave in Germany's Swabian Alps, each of us must

put on protective gear: a helmet with a watertight headlamp, rip-resistant coveralls, thick gloves and sturdy boots. The cavern we plan to explore is a water cave through which the Elsach River flows, so we need to dress to prevent hypothermia as well; a diving suit and neoprene footwear are necessities. Diving through "siphons," parts of the cave that are completely filled with water, will be on today's agenda, too, so each of us will need diving equipment: a mask, a breathing regulator and a heavy tank of air. Needless to say, we also want to put our test watch, the Sinn U2 S, through these ordeals.

We chose the Sinn U2 S watch for this excursion mainly for its robust and scratch-resistant case; a caver's watch often rubs against rough stone, and not only when he must crawl through low and narrow passageways. To create this rugged case, Sinn uses submarine steel, the same steel alloy that's used on the outer

hull of submarines. Then the steel is "Tegimented," i.e., hardened using Sinn's special engineering process, and coated with a layer of hard black material. The resulting surface is nearly as hard as sapphire. (For comparison, the 316L steel used for watch cases has a hardness of 220 Vickers; submarine steel is at least 300 Vickers; hardened submarine steel is 1,500 Vickers; and a coating of hard material brings the hardness up to 2,000 Vickers, i.e., the same hardness as sapphire.) But the case is this hard only on the surface; underneath, the hardness decreases with depth. Sinn hardens the steel case of the U2 S before coating it with the layer of black material to prevent an "eggshell effect" from occurring. If a hard coating is applied to a comparatively soft material, a strong blow can cause the hard outer layer to break inward like the shell of an egg: the softer underlying material yields to the impact. But the Sinn's steel case is less likely to break than

*The cave's entrance narrows quickly.*



## SPECS

### SINN U2 S

**Manufacturer:** Sinn Spezialuhren, Im Füldchen 5-7, D-60489 Frankfurt, Germany

**Reference number:** 1020.020

**Functions:** Hours, minutes, seconds, date display, second time zone

**Movement:** ETA 2893-2, automatic, 28,800 vph, 21 jewels, stop-seconds function, rapid reset for the date display, Incabloc shock absorption, Glucydur balance, fine adjustment via index adjuster and eccentric screw, 42-hour power reserve, diameter = 25.6 mm, height = 4.1 mm

**Case:** Submarine steel, Tegimented and coated with hard material; filled with protective gas; three dehumidifying copper sulfate capsules; special oil for temperatures ranging from -45° to +80° C; fully threaded back; water resistant to 2,000 m; impossible-to-lose, unidirectional rotating bezel; domed sapphire crystal with nonreflective treatment on both sides

**Strap and clasp:** Silicone strap with secure folding clasp made of stainless steel, Tegimented and coated with hard material, with built-in divers' extension

#### Rate results:

Deviations in seconds per 24 hours

Dial up	+9
Dial down	+5
Crown up	+2
Crown down	+7
Crown left	+6
Crown right	+5
Greatest deviation of rate	7
Average deviation	+5.7
Average amplitude:	
Flat positions	301°
Hanging positions	260°

**Dimensions:** Diameter = 44 mm, height = 15.5 mm, weight = 176 g

**Variations:** Without a coating of hard material (\$2,950)

**Price:** \$3,450

*The red accents on the dial are a perfect match for our red coveralls.*





We donned diving gear to traverse a "siphon," a low and narrow flooded passage in the cave.

similar scratch-resistant ceramic cases because the underlying steel case has been hardened. In addition, the Sinn has a non-reflective coating, which has a hardness of 1,800 Vickers and is therefore highly scratch resistant. The case of the U2 S is thus very well prepared for our descent.

**AS WE APPROACH** the entrance to the Falkenstein cave, the sun is shining on a picturesque scene: a mountain brook rushes along next to a hiking trail that winds through sparse forest toward the cliff face. We wriggle into our diving suits, slip on our red coveralls, pull on our helmets and strap tanks of air to our backs. I strap on the Sinn U2 S, which just barely fits around my diving suit's 5-mm-thick neoprene sleeves with the divers' extension folded out.

The watch is well protected against water and moisture. The case is water resistant to 2,000 meters. The seals are made of green Viton, a synthetic rubber and fluoropolymer elastomer that has a

longer lifespan than the black nitrile rubber often used for O-rings in watches. Viton lets just one-quarter as much gas and humidity diffuse into the watch's interior and is resistant to a wider variety of chemicals. Water resistance is increased further by Sinn's dehumidifying technology: the case is filled with a protective inert gas that has large molecules, which makes it even more difficult for water vapor to penetrate. Another element of Sinn's dehumidifying system: copper sulfate capsules inside the case, which bind any residual moisture. The extra effort pays off: we see no fogging on the underside of the crystal – neither in the mild springtime air nor in the cave, where the watch will undergo a variety of conditions, including a dip in 48-degree water.

We phone a friend to say that we are getting ready to enter the cave. He promises to call rescuers if he doesn't hear from us again in six hours. There's no signal reception in a cave so cellphones and radios are useless. A spelunker is totally

**WE MUST PASS  
THROUGH A  
CRAWLSPACE  
20 INCHES HIGH  
AND COMPLETELY  
FILLED WITH  
WATER.**

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Most watch fans know Graham best for sporty models like the Chronofighter and Silverstone. Now the Swiss brand with British roots establishes its haute horlogerie bona fides with the new Geo. Graham the Moon limited edition, a complicated, astronomical-inspired timepiece with a flying tourbillon and a perpetual moon retrograde. ... [Read More...]

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**The Sinking Man's Watch: Omega Seamaster Ploprof**  
WatchTime's Jens Koch tests the Omega Seamaster Ploprof, a re-edition of a classic divers' watch from 1970 with double the original's water-resistance and a manufacture caliber. Click here for the results, along with a gallery of original photos by Nik Schötzel. ... [Read More...]

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TEST

## Sinn U2 S

*After the ordeal, the ETA 2893-2 keeps time as if nothing had happened.*

cut off from the outside world. If rock breaks from the ceiling and blocks our return route, our only hope of rescue would be from someone outside the cave who knew about our expedition and the approximate time we planned to resurface.

The Elsach River, which we had been following upstream, emerges from the impressive entrance to the cave. We turn the rotatable bezel of the U2 S to the minutes hand so we can measure the time we'll spend inside. The bezel clicks into place in single-minute steps. This task is accomplished easily, as are all other settings. Fine tuning is convenient and speedy thanks to rapid resetting for the

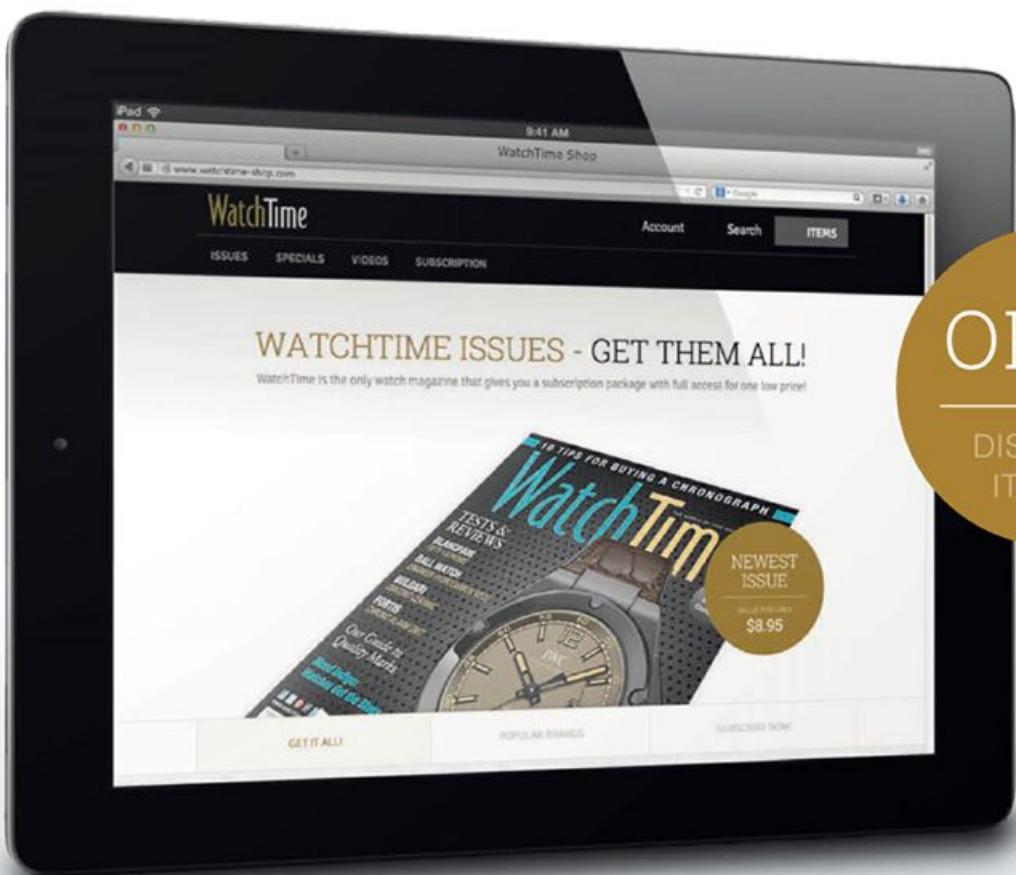
date, quick setting in hourly increments for the second time zone, and a stop-seconds function to halt the seconds hand while the hour hand and minutes hands are repositioned.

**NOW IT'S TIME** to venture into the darkness. We soon find ourselves on all fours, crawling through cold water at the first narrow spot in the cave. We have to keep our heads down to avoid banging our helmets on the low ceiling. Daylight fades and then disappears completely after we round two or three curves. The cone of light from our headlamps plays across the wet stone, and we try to shine our lights



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into the chest-deep water to see some of the big boulders that we will have to scramble over or slide down. Water penetrates our neoprene suits. We feel uncomfortably cold whenever we stop moving, for instance during our numerous stops to shoot photos, because we're lying almost entirely in water. We're also carrying heavy photographic equipment: a tripod, lamps and a bulky underwater camera. Nonetheless, our spirits are high. We all feel strong and confident. And we concentrate on treading carefully. Sometimes we have to climb over fallen rubble or squeeze through narrow passages.

The Sinn U2 S frequently makes contact with the rocky walls and sometimes these encounters are anything but gentle. The dial's legibility remains very good, although I don't need the ample coating of luminous material because my headlamp brightly illuminates the watch whenever I lower my gaze to check the time. The black and red of the watch matches my coveralls. This version of the U2 looks more like a "tool watch," a piece of expedition equipment, than does the U2 model that has an uncoated steel case. After more than three hours in the cave, we encounter our first siphon. Only about 20 inches separate the floor from the ceiling here. This low crawlspace is completely filled with water or, to be more precise, water comes rushing toward us because the cave is a subterranean riverbed. We could not have gone any farther without diving equipment.

Fortunately, a cable has been installed at this challenging spot, so we should be able to use it to pull ourselves through to the other side. But before we attempt this maneuver, we put on our diving masks, open our tanks of air and insert the breathing apparatus into our mouths. The passageway is so low that we can't keep the air tanks on our backs; we must pull them along beside us. Our neoprene suits make us so buoyant that the flowing water lifts us up and our backs and helmets scrape along the siphon's ceiling. This produces a very disconcerting sound, as though someone were struggling to survive.

One after another, we dive through the siphon. The passageway is only a few





I SMACKED THE WATCH  
AGAINST ROCKY WALLS  
BUT THE CASE SUFFERED  
NO VISIBLE DAMAGE.

*Many boulders  
had fallen long  
ago from the  
cave's ceiling.*

yards long, but it takes courage to overcome our nervousness and plunge ahead under water, into the unknown. We're also well aware that this siphon leads us deeper into the cave, making it more difficult to rescue anyone who becomes injured. But a few minutes later, we're all safe and sound on the other side. Our guide congratulates each of us with a handshake: we've successfully traversed our first siphon!

**IT'S NOT MUCH** farther to get to one of the cave's large halls, but my watch tells us that we've already been underground for nearly four hours. The photo shoots took much of our time. If we descend any farther we will have to navigate at least 22 siphons. The cave stretches onward after that, but that's as far as anyone has explored so far. We, too, have had enough for today. Everyone wants to return to daylight. But first we have to dive through the siphon again, which is not quite so daunting the second time around, partly because we've experienced it before and partly because we know that each scrape and tug brings us closer to the cave's entrance.

*Despite Tegimenting and coating with hard material, the clasp suffered some minor scratches.*



We progress along the return route without taking any long breaks to shoot photos. Our constant motion helps keep us from feeling cold. Fortunately, we don't have to test the U2 S throughout its entire temperature range. Sinn guarantees that this watch will continue to work at temperatures between -45 and +80 degrees C (-49 and +176 degrees F). This wide range is achieved by using synthetic oil in tandem with manufacturing tolerances that take into account the watch materials' tendency to expand or contract as temperatures rise or fall.

We repeatedly stop to admire unusual stone formations. The U2 S is almost impossible to feel through the sleeve of my neoprene suit. But I know that it is quite comfortable, despite its ample 44-mm diameter, because I have been wearing it for several days before our cave excursion. Nearly 5½ hours after entering the cave, we breathe a collective sigh of relief as we emerge into daylight and congratulate one another.

Now we finally find a use for the tripod that we've been carrying with us the whole way. We set it up and pose for a group photo. Then we make a quick

## SCORES

SINN U2 S

**Strap and clasp (max. 10 points):**

The supple silicone strap and the robust safety clasp with divers' extension are high quality and work very well, but the strap attracts dust.

8

**Operation (5):** The crown, which uncouples from the winding mechanism when it's screwed shut, is easy to turn and pull out; setting is convenient and speedy thanks to a stop-seconds function, quick setting in hourly increments for the second time zone, and a rapid-reset function for the date.

5

**Case (10):** Well-crafted case with a high degree of water resistance, sophisticated stay-dry technology and scratch-resistant surfaces

9

**Design (15):** The handsome "tool watch" design looks even better in the black version.

13

**Legibility (5):** The legibility couldn't be better day and night thanks to readily visible hands, high contrast and plenty of luminous material.

5

**Wearing comfort (10):** Despite its heavy weight, this watch fits very comfortably; the crown does not press against the back of the wrist.

9

**Movement (20):** The unaltered ETA movement with Glucydur balance is robust, reliable and time tested.

12

**Rate results (10):** Good rate results with a slight daily gain and no large differences among the various positions

7

**Overall value (15):** The price is low considering the watch's many technological features, which make it extremely durable.

13

**TOTAL:** **81 POINTS**

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From left, cave guide Udo Happ, diver Jörg Stolzenberg, diving instructor Jens Köppe, journalist Jens Koch and photographer Nik Schölzel

phone call to our contact person to say that all's well, thus making sure that the rescue service doesn't receive a false alarm. It was a wise decision not to venture beyond the siphon to the large halls. We change into dry clothes and head for the local tavern, where we eat, drink, relax and review the day's experiences.

**THE MOMENT OF TRUTH** for our test watch comes the next day. How well did the Sinn U2 S survive this ultimate endurance test? We see no scratches on the case with the naked eye. That's surprising because I didn't treat this watch very kindly during our expedition. Even though I was distracted by our surroundings, I knew that I smacked the watch against the rocky walls more than once.

The clasp didn't fare quite as well. With its protruding safety buttons and smooth finishes, the rather thick folding clasp struck rock almost every time I

reached for a handhold. Fine scratches are visible and we can see the underlying metallic material, even though the scratches aren't very deep. The outer black layer seems to be rather thin. We know that stone is a harsh adversary and Sinn states that the colored coating is scratch resistant but not indestructible. Nonetheless, we're a bit disappointed.

Would a thicker coating on the clasp have fared better? Would the scratches have been less prominent on the version of the clasp that was Tegimented but not coated with hard material? Both questions are difficult to answer. The case, at least, suffered no visible damage, and you can replace the scratched clasp with a new one. And we don't expect extreme contact with rocky walls to occur in everyday life.

All in all, the U2 S coped very well with the rigors of our subterranean excursion, but we did notice one draw-

back that also occurs in daily life: the silicone strap attracts dust and then looks as if it has discolored. Fortunately, the strap can be restored to pristine cleanliness simply by rinsing it in water.

The movement, the ETA 2893-2, which is the two-time-zone version of the 2892, performed quite well on our timing machine. With an average gain of 5.7 seconds per day, our test watch's rate was quite satisfactory. The readings in the various positions weren't spread too far: the greatest difference was just 7 seconds.

If you unscrew the fully threaded back, you'll be pleased to see that the movement has a precise Glucydur balance and looks quite handsome, with rhodium-plated bridges and rotor, Geneva waves, cloud-pattern embellishment and several blued screws. The movement has been used for decades and has proven itself in countless watches. This is only a standard caliber, so connoisseurs cannot expect to find special features such as regulator-free fine adjustment.

The Sinn U2 S model that we tested sells for \$3,450. This is quite a bit more than Sinn's entry-level model at \$1,090. But bear in mind exactly how much technology is packed into the U2 S: water resistance to 2,000 meters, a rotatable bezel, a case made of submarine steel that's been hardened and then coated with a layer of hard material, stay-dry technology with a filling of protective gas and stay-dry capsules, plus guaranteed functionality throughout a wide range of temperatures. Each of these features offers the owner a valuable benefit and increases the watch's margin of safety. Some other brands ask significantly more for watches that contain the same movement in the same quality level but lack these technologies.

The Sinn U2 S faithfully accompanied me into the cave. I could rely on it throughout our expedition. I expected this extreme trip to leave some traces on the watch, but the minor wounds are just that: minor. The bottom line: if you're looking for a faithful companion to join you when you indulge in extreme hobbies or work in a rigorous profession, or if you just want to own a watch with a wide margin of safety, then the U2 S is for you. ○

**THERE WAS NO FOGGING  
ON THE UNDERSIDE OF  
THE CRYSTAL DESPITE A  
DIP IN 48-DEGREE WATER.**

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# *Piaget's Beginnings: A Jura Tale*

*Florence Müller's new history of Piaget opens a window not just on the company but on the entire Jura watchmaking world.*



# E

*ditor's note: The Piaget watch company was born in 1874 in the small village of La Côte-aux-Fées in the Jura Mountains. In many ways, the company's early history reflects that of Jura watchmaking in general: the Piaget family, farmers, like most Jura families, adopted watchmaking as a way to make money in winter, when farming was impossible. A strong work ethic, shared by all Jura watchmakers, paired with the ambition to excel in a particular watchmaking specialty – first, escapements, and later, ultra-thin movements – made Piaget a success.*

*The following excerpt is from a new book about Piaget entitled, Piaget: Watchmakers and Jewellers Since 1874, by fashion and art historian Florence*

*Müller. It traces the company's history from its start to the present day. The book, 328 pages long, was published by Harry Abrams, New York. Éditions de La Martinière holds the copyright.*

## **BEFORE WATCHMAKING**

In the 16th century the county of Neuchâtel was marked by the reformational teachings of Guillaume Farel. His ideas determined the organization of social life at every level, from religious and economic life to professional and family life.

In his work, *The Protestant Ethic and the Spirit of Capitalism*, Max Weber explains: "... one thing was unquestionably new: the valuation of the fulfillment of duty in worldly affairs as the highest



Georges-Édouard Piaget (with hand on baby carriage) and his family and employees in front of the company's new premises in 1911

form which the moral activity of the individual could assume. This it was which inevitably gave everyday worldly activity a religious significance, and which first created the conception of a calling in this sense." At the time, the concept of work, as influenced by the Reformation, played a definitive role in the development of watchmaking in the Neuchâtel Jura. That influence would persist across the centuries and have a profound impact on the Piaget spirit of enterprise.

#### A VILLAGE AND A FAMILY: LA CÔTE-AUX-FÉES AND THE PIAGETS

The name "Piaget" suggests that the family's origins were in toll-collecting – *péage* meaning "to collect tolls." The

first mention of Piaget as a family name appears in the 14th century in the records of various Neuchâtel villages, most notably in the Val-de-Travers valley. The presence of Piaget family members in the remote village of La Côte-aux-Fées, perched more than 3,000 feet above sea level, dates back to the 17th century when a Piaget married a daughter of the parish. The village takes its name from livestock farming, then one of its main sources of livelihood: *La Côte* refers to the slopes where the sheep grazed; *fayes* means "sheep" in local dialect.

Farming followed the rhythm of the seasons, supplemented by other activities when the weather turned cold. Lace-making made its appearance in the region

in the 16th century, followed by watchmaking several decades later, although on a much smaller scale. Lace-making would remain the dominant activity until 1830, with the little village of La Côte-aux-Fées alone boasting some 300 lace-makers, men and women alike, who exported their wares all over Europe.

By the middle of the 19th century the situation had changed, with many local households engaging in watchmaking alongside farming. Among them were Édouard and Vérona Piaget, who lived at the Ferme des Tattets. On March 6, 1855, the couple welcomed their first child, a baby boy named Georges-Édouard, born in the commune of Les Ponts-de-Martel. This bucolic setting,

permeated by the Protestant work ethic and a culture of watchmaking, was the perfect place for a child to acquire a passion for watch mechanisms and develop a spirit of enterprise – a boy whose name would one day resound through the annals of horology.

IN 1883, THE SMALL  
VILLAGE OF LA CÔTE-AUX-FÉES  
HAD 470 WATCHMAKERS.

The first half of the century was marked by political unrest and social upheaval. Republicans clashed with Royalists in a region that joined the Swiss Confederation in 1814 but also remained a Prussian principality until 1848. The villagers of La Côte-aux-Fées played their part as champions of Republican values, but remained as hard working as ever, expanding the local economy. “Watchmakers that numbered 150 in 1830 totaled more than 400 in 1866. The 1883 census records 470, of which 247 were men and 223 women. La Côte-aux-Fées escaped the worst of the crisis suffered by the watchmaking industry. While prices did indeed fall, there was no shortage of

work for local craftspeople, they were content with their lot, for they knew how to rise early and go to bed late – for them there was no appointed time to start and end the working day. These are tireless, serious-minded workers who persevere in everything they do.” [*La Côte-aux-Fées: Esquisse historique et monographique*. E. Quartier-la-Tente, Ed. J-J Kiessling, Neuchâtel, 1890.]

At the end of the 19th century, watchmaking was still rooted in a method of production known as *en parties brisées* or *établissage*. Introduced in the Jura a century earlier, this system led to a high degree of specialization by breaking down large tasks into smaller sub-tasks, each performed by a specific workshop. La Côte-aux-Fées, for example, specialized in escapements: the device that delivers impulses to the balance wheel.

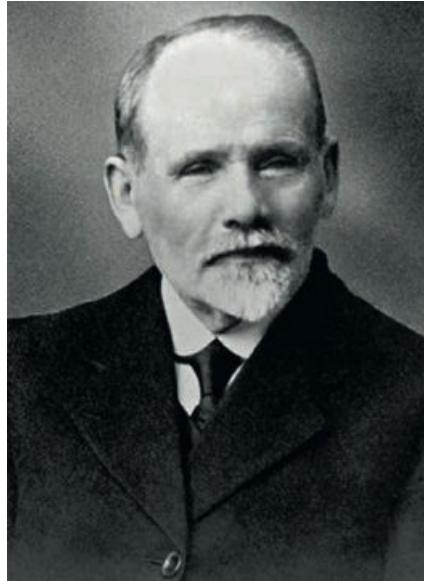
**A WIND OF MODERNITY**

This traditional *établissage* method of production then underwent an upheaval when Swiss exports to the United States plummeted in the face of stiff competition from American watchmakers. The time had come to rethink the Jura watchmaking industry. It was in this context of impending change that Georges-Édouard Piaget founded his business in 1874. Aged just 19 at the time, he had successfully completed his watchmaking appren-

The village of La Côte-aux-Fées in 1890



Georges-Édouard Piaget in the late 1920s





Georges-Édouard and Emma Piaget with their children in 1920

ticeship in Les Bayards, specializing in escapements. Despite his youth, he had a clear vision of the future and a determination to see his project through whatever the challenges posed by a fast-evolving market.

In an uncertain economic climate, Georges-Édouard put the accent on quality and opted for a bold position at the upper end of the market. He started by focusing on escapements, his village's specialty, eventually devising an improved version of the anchor escapement that served to establish his reputation among the leading watchmakers of the time.

Family roots were important to the young Georges-Édouard. Inspired by his own parents' passion for watchmaking, he was committed to passing on that passion to his loved ones. His wife, Emma

Bünzli, whom he married in 1881, would give him 14 children. Like her husband, Emma was a native of Les Ponts and a watchmaker by profession. Both shared a devotion to their craft that we see embodied in the watch that Georges-Édouard hand-made for his wife – a gift she would treasure all her life. Portraits of the couple later in life show Emma wearing the watch on a chain around her neck or clutching it like a talisman.

Georges-Édouard would count on his numerous progeny to develop his enterprise. In 1890, the family moved into the ground-floor living quarters of the newly constructed chapel of the Evangelical Free Church. This is where the children would grow up and build their future.

For Georges-Édouard, the key to success always lay in diversifying the family's range of watchmaking skills. His first

two children, Édouard and John, would pursue their parents' specialty in escapements, while their brothers would develop new skills. To these would later be added the art of jewelling, a specialty of the Vallée de Joux, birthplace of brother-in-law Roland Aubert. Timothée, the Piagets' third-born son, did not immediately go into watchmaking but spent some years honing his entrepreneurial acumen in other areas of expertise.

In 1911, it was Timothée, and not the Piagets' firstborn, who was entrusted with the reins of the family business, which operated collectively under the trade name Georges Piaget & Cie. That same year, the business moved to new workshops on the premises of the former Café Français, a property acquired by Édouard junior and the place where he also set up home for his own family.

## GEORGES-ÉDOUARD PIAGET AND HIS WIFE, EMMA, ALSO A WATCHMAKER, HAD 14 CHILDREN. SON TIMOTHÉE TOOK THE FIRM'S REINS IN 1911.

His father and company founder Georges-Édouard would keep a close eye on Piaget & Cie's fortunes until his death in 1931. His skills and uncompromising standards were key to the firm's success, and so too was his ability to federate, or organize people to work collectively. His motto, "Always do better than necessary," became words to live by, not just for his nearest and dearest but for an entire village community, as attested by the firm's book of manufacturing workers, in which other family names from La Côte-aux-Fées increasingly appear alongside the name Piaget. These were people from a remote, close-knit community, bonded by their commitment to excellence. Together they would blaze a trail for Piaget that would reach far beyond the confines of their native valley.

Georges-Édouard Piaget oversaw the extraordinary process of transition that transformed an independent watchmaker into a modern business with a comprehensive and distinctive product offering. The company's expansion is reflected in its listing in the 1913 edition of the *Indicateur Davoine*, a general watchmaking directory for Switzerland and surrounding countries. The entry read: "Anchor escapements, precision-engineered and ultra-slim; stones and assorted goods."

From the outset it is clear that the firm was specializing in ultra-thin watch parts, an expertise it would consolidate over time while simultaneously broadening its peripheral activities. By 1916, also in the *Indicateur Davoine*, Piaget & Cie was advertising movements of every shape and thickness, starting with 6-ligne

movements and including anchor escapements of all sizes and escapement roller jewels, all constructed to "pristine standards."

### ONE NAME, ONE SIGNATURE, ONE BRAND

Piaget became increasingly renowned for the quality of its movements and was soon supplying most of the big names in watchmaking, including Breguet, Rolex, Cartier, Audemars Piguet, Zenith, Vulcain, Longines, Ulysse Nardin, Vacheron Constantin and Omega, to mention but a few. Advertisements in the trade press made much of Piaget's ultra-thin calibers measuring just 2.4 mm thick.

By 1926, the house was selling pocketwatches under its own brand name, and by 1934, Piaget & Cie was recorded in the Swiss Commercial Register as "manufacturing and selling watches of every style." Eight years later, its ultra-thin coin watches were advertised in the *Journal Suisse d'Horlogerie et de Bijouterie*. The brand was described as offering a range of coin watches that showcased its mastery of the ultra-thin, including "watches with date windows, waterproof and automatic watches, coin watches, jewelry watches and ultra-thin watches." This was also when Piaget first coined the tagline "Luxury and Precision," looking to build brand identity as a firm specializing in refined and valuable timepieces.

But the real turning point came a year later, in 1943, when Piaget became a registered brand name – an achievement largely owed to Timothée

with help from his siblings and children. All of them played their part in the firm's success. Timothée, like his father before him, chose not to nominate his two eldest boys as his successors. Instead it was to Gérald and Valentin that he passed the baton in 1945, confident of their ability to build up business momentum and create a distinctive product offering.

The handover from one generation to the next marked a watershed in village life, confirming Piaget's key role in the local economy. Work was already well underway on the new manufacturing site – a building to match the family's ambitions, designed to accommodate up to 150 employees and featuring large bay windows arranged in a semicircle. Overlooked by the former watchmaking workshops, the building became a focal point for the village non-agricultural workers and was known locally as *la fabrique* (the factory). Following its official opening in the spring of 1945, watchmaking would enter a new era.

The next year, Piaget & Cie inaugurated a stand at the Basel Fair. The exhibition was the undisputed main event for the watch industry, dedicated to showing off Swiss-made products and therefore an ideal place to make new connections. Piaget's attendance clearly signaled its ambitions for international expansion and no one knew that better than Piaget company head Gérald Piaget, the man in charge of business development. Gérald would represent his company far and wide, carrying suitcases packed with the latest collections of timepieces and move-

*Gérald Piaget  
in 1945*



ments, which Piaget continued to supply to other leading watch brands in Europe and the United States. Armed with a winning smile and a magnetic personality, Gérald won new orders from customers in all corners of the world.

Supporting him was Camille Pilet, who shared Gérald's keen business sense and all-important human touch. Together the two men built up a vast distribution network, encompassing not just iconic cities like New York, Paris and Milan but also more exotic destinations like Lima, Bombay and Havana – an increasingly global outreach widely featured in Piaget publicity.

Gérald and Camille forged firm friendships with the people whom they counted as their brand ambassadors, as well as part of the family. In 1959, Piaget's Cuban distributors Gedalio Grinberg and Fabian and José Weiss were forced to flee to the United States. Camille Pilet invited them to take over the newly created Piaget Watch Corporation and develop the American market. It was too good an opportunity to pass up. By 1961, the three expats, now based in New York, were all set to embark on their new venture, carrying a suitcase containing the samples to show potential customers – a handful of precious Piaget watches that they collected from the bank every morning and returned to the safe at night. Gedalio Grinberg proved particularly successful in his marketing endeavours.

In the early 1960s, Gérald Piaget and Camille Pilet were joined by Emil Keller, who had entered the firm in 1957. From

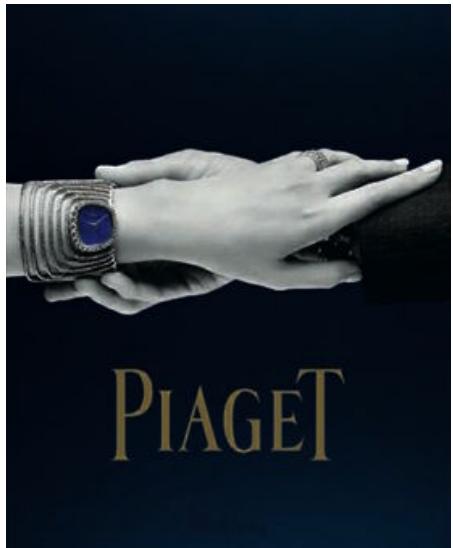


*The Piaget  
building, 1945*

America to Japan and beyond, they were there, organizing events specifically targeting discerning clients. In just a few years, the brand had taken global markets by storm, demonstrating superlative creativity through its innovative approach.

As a secluded mountain family, the Piagets had a long tradition of self-sufficiency, which meant maintaining a full range of in-house skills. In no time, they were ready to add communications and sales to their skills portfolio.

In 1959 they acquired their first boutique in Geneva, the Salon Piaget, which opened on June 13. Its design was the handiwork of creative thinker Valentin Piaget, who put the accent on innovation and surprise. The result was a boutique that stood out from its elegant Geneva surroundings. In place of the traditional



*The book traces Piaget's history from its founding in 1874 to the present day.*

large shop windows displaying a plethora of watches, Valentin opted for narrow windows that drew the eye to a select collection of models. The shop interior was even more sparsely decorated, with virtually no watches on display. Rather, a stripped-down elegance made for a clean and inviting salon space. Even the shop sign breathed an air of understated exclusivity. All it said was, "Piaget Horlogers-Joalliers." Valentin Piaget made a special appearance at the opening ceremony but otherwise concentrated on developing new ways to distinguish the brand. As an imaginative and ingenious thinker, he drew inspiration from the serene landscapes of La Côte-aux-Fées. For Valentin, the company motto, "Always do better than necessary," meant striving to do the impossible. ○

*The quality-control department in 1950. Timothée Piaget is on the far right.*

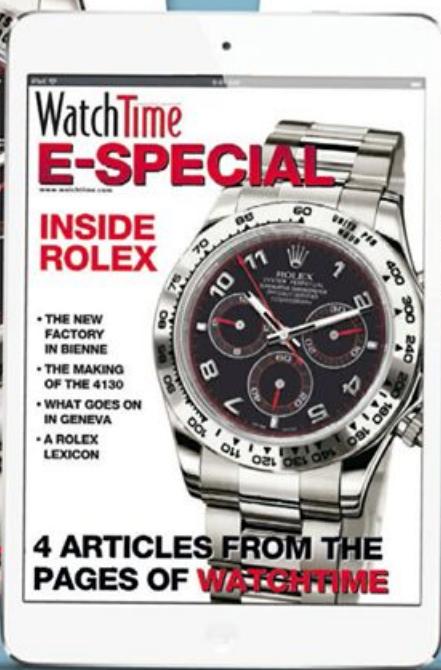


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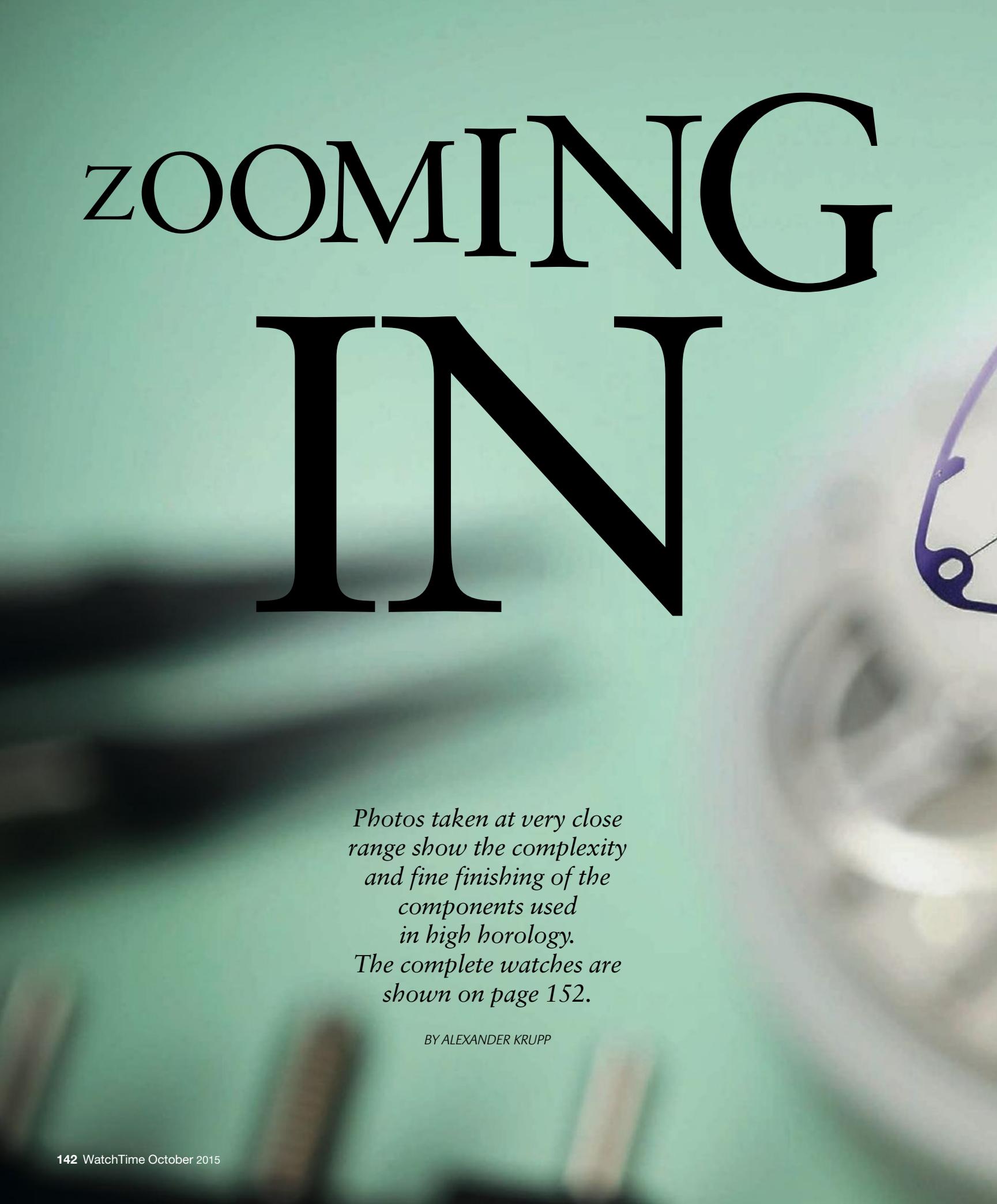


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# ZOOMING IN



*Photos taken at very close range show the complexity and fine finishing of the components used in high horology. The complete watches are shown on page 152.*

BY ALEXANDER KRUPP



## GIRARD- PERREGAUX

Girard-Perregaux unveiled a prototype of its constant escapement in 2008. In it, a paper-thin blade is suspended inside a butterfly-shaped silicon frame. As the double twin barrels gradually run down, a lever tips this blade back and forth, thus repeatedly transferring precisely the same amount of force to two unusually shaped escape wheels. Five years later, G-P introduced a watch containing the device, the hand-wound Constant Escapement L.M., which G-P says will run with an extremely regular rate for six days. The initials "L.M." are those of G-P's former owner, Luigi Macaluso, who died in 2010.

## VACHERON CONSTANTIN

Each individual bridge in Vacheron Constantin's manual-wind Caliber 2790SQ, which powers the Malte Tourbillon Openworked, is a piece of art in its own right. The bearing parts have been reduced to the essentials with no effect on the functioning of the tourbillon, hand-type date indicator or power-reserve display.





## ULYSSE NARDIN

Ulysse Nardin is a pioneer in the use of silicon watch parts. One example is its use of "DIAMonSIL" (diamond on silicon) components in the self-winding Caliber UN-118. An extremely thin layer of man-made diamond on the pallet and escape wheel significantly improves their surface texture. The results are less wear and longer intervals from one servicing to the next than with pure silicon components. The technique is used in UN's special editions and in some serially manufactured models like the Marine Chronometer Manufacture.

PORTRIO

*The Inside Story*





## GLASHÜTTE ORIGINAL

Glashütte Original introduced its first in-house chronograph base movement, the self-winding Caliber 37, last year. Like all of the brand's movements, it has a swan's-neck fine adjustment mechanism. This allows a watchmaker to adjust the rate in infinitesimal increments. The arcing spring, which presses the regulator arm against the adjusting screw, adds beauty to the escapement subassembly.



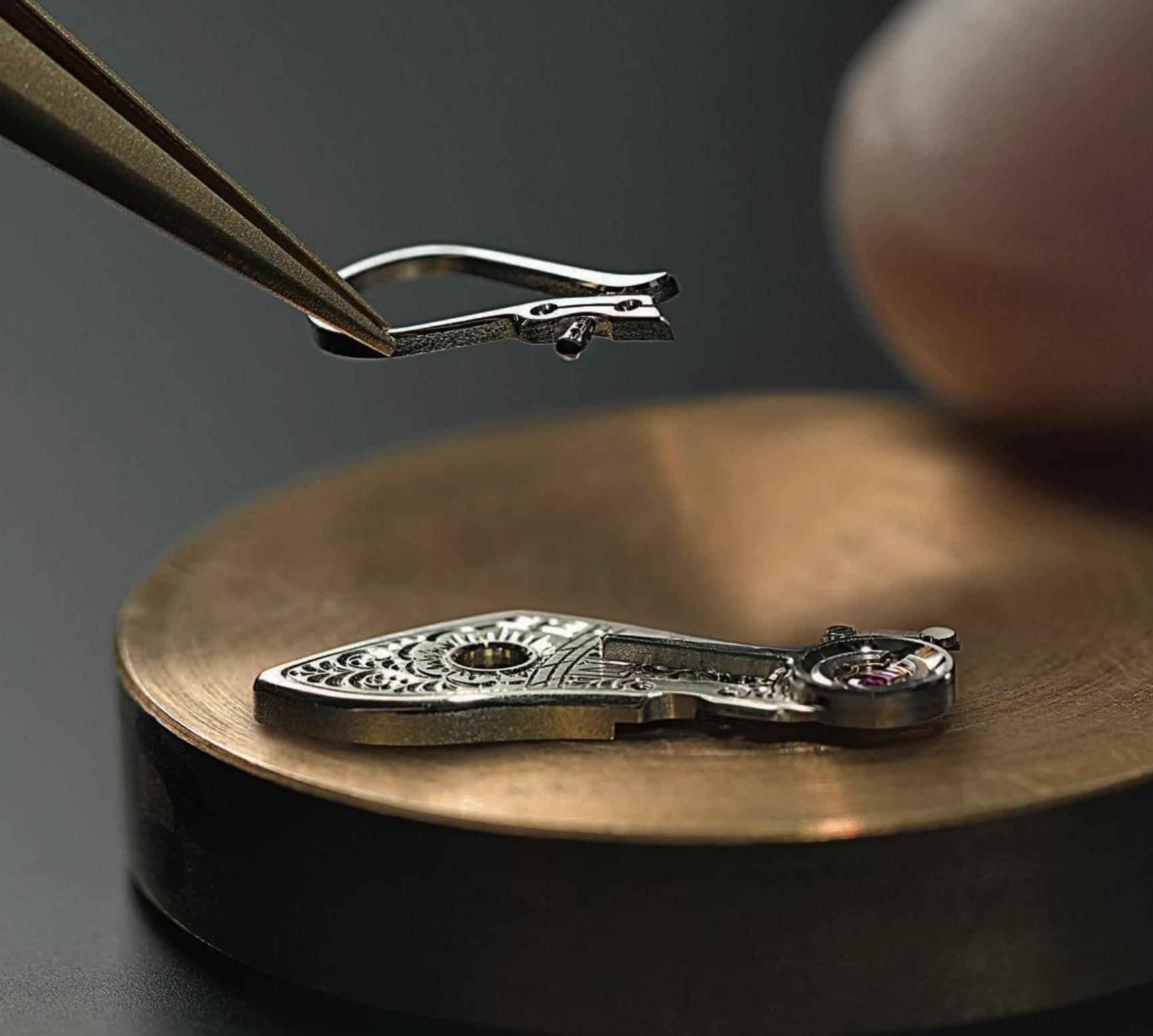
## GREUBEL FORSEY

The French word “*tourbillon*” means “whirlwind” and aptly describes this most complicated type of escapement: the balance is mounted inside a steadily rotating cage. The device is meant to lessen the effects of gravity on the balance’s rate. The Double Tourbillon 30° Technique from Greubel Forsey offers not one but two such rotating cages, thus further reducing the ill effects of gravity on rate behavior. In this double tourbillon, the outer cage completes one rotation every 4 minutes. It contains an inner cage that rotates once per minute and is inclined at a 30-degree angle to the plane of the outer cage’s rotation.



## IWC

The Portugieser Tourbillon Hand-wound from IWC Schaffhausen is equipped with a flying tourbillon: there is no upper bridge to obstruct one's view of the escapement. It is a classic, 1-minute tourbillon, incorporated into the in-house Caliber 98900.





## *A. LANGE & SÖHNE*

A. Lange & Söhne lavishes fine embellishments on every visible component of its watches. A hand-engraved balance cock is adorned as artistically in the brand's simpler watches, like the 1815 Up/Down, as it is in its complex ones. The swan's-neck fine adjustment mechanism is used not only to finely adjust the rate but also to correct the beat error, i.e., the difference between the clockwise and counterclockwise swings of the balance.

# ZOOMING OUT

*The photos on the preceding pages show mechanisms and components used in these watches.*



Girard-Perregaux  
Constant Escapement L.M.  
White gold, \$159,500



Vacheron Constantin  
Malte Tourbillon Openworked  
Platinum, \$230,000



Ulysse Nardin  
Marine Chronometer Manufacture  
Stainless steel, \$10,300



Greubel Forsey  
Double Tourbillon 30° Technique  
Rose gold, \$580,000



Glashütte Original  
Senator Chronograph  
Panorama Date  
Rose gold, \$31,500



IWC  
Portugieser Tourbillon  
Hand-wound  
Rose gold, \$59,000



A. Lange & Söhne  
1815 Up/Down  
Rose gold, \$29,400

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*At a meeting of Army veterans, Steve Lee Parsons wears his Corum Golden Bridge. He holds a wristwatch once owned by a WWI veteran. It was converted from a 1915 Hampden Watch Co. women's pendant watch.*



*Shane Spence at the top of Sněžka, the highest peak in the Czech Republic, sports his Omega Speedmaster Michael Schumacher Legend Collection Co-Axial.*



*Gregory J. Ferzetti, wearing a two-tone Rolex Submariner ceramic with black dial, holds his daughter Cecelia Grace, who is five hours old.*



*Celebrating his 60th birthday and his retirement from the Dallas Fire and Rescue Department, Michael Johnson wears a Panerai Ferrari Granturismo Chronograph. Valeria Cornell sports an Ebel Wave Lady.*

*John Dowdle watches the sunset over the Yangtze River in China and enjoys a splash of Cuban rum while wearing his Ball Engineer Master II Diver Worldtime.*





*Jonathan Wong and his four-month-old son Robin vacationing in Lyon, France. Wong is wearing a Rolex Explorer from the early '70s.*



*Ray Vasquez, with his favorite guitar, wears a 2007 Panerai Pam 250 Daylight Chrono, right, and an Omega Seamaster 007 Quantum of Solace.*



## Facetime Galleries

To submit a photo, please send your image to [photo@watchtime.com](mailto:photo@watchtime.com) with a short description identifying each person in the photo and the watch each one is wearing. Please give the first and last name of the wearer and the brand and model of the watch. If the photo was taken at an event, please specify when and where it was held. Only clear images in which the faces of both watch and wearer are visible will be considered for publication. Images must be in JPEG format, no smaller than 1 MB. Only the best-quality and most interesting photos will be considered.

*From left, Anthony D'Addario wears a Breitling Evolution; George D'Addario, a Rolex Datejust II; Ken Roberts, a Breitling Navitimer World; and Mat Roberts, a Hamilton Skeleton. They are at Gina D'Addario's wedding.*



# Women on Their Minds

It's a truth as old as the species: women make men do crazy things. What, for example, could possibly make the mechanical-watch wizard F.P. Journe spend eight years working on a quartz-watch movement?

A woman, of course.

Journe was in New York recently for the U.S. launch of his first-ever watch for women, called Elegante. Journe enjoys something akin to cult status among his watch-collector fans, virtually all of them males. For them, he produces 850 men's watches per year at his atelier in the center of Geneva. So why make a women's watch? "First," Journe told me, "because a woman asked me to. Second, I wanted a Journe for women."

But why quartz? Swiss watch companies tell us all the time that women are warming to mechanical watches, showing real interest in them, buying them, wearing them, blah-blah-blah.

That's bunk, according to the refreshingly candid Journe. "It's not true," he says. "I know only two women watch collectors, one in Lausanne and one in Hong Kong. Do women like mechanical watches? No. Just look at what they wear: Cartier quartz watches!"

So it was that Journe, of all people, got into the quartz-watch business. There's much more to the story of Journe's adventures in quartz-movement making. (Yes, there really is a little heart on the watch's backplate.) Read all about it on page 44 of this issue.

Journe's is just the latest in a fleet of men's brands that have been lured by the sirens into the unfamiliar and dangerous waters of the women's watch market. Why do they do it? Because it's there. Certainly the great Journe knows that for a men's watch brand, these waters are rocky and uncharted. Still, unlike Odysseus, who steeled himself to the sirens' song, they succumb, lured by the enchanting legends of the Tank, the Twenty-4 and the Ballon Bleu, watches

that defied the gender gap to win fame and fortune.

In the luxury-watch world, the hardest thing to do, given that men are from Mars and women are from Venus, is make a unisex watch that appeals to both genders. It is damn near impossible, but it has been done. The most recent example is Cartier's Ballon Bleu. Former Cartier CEO Bernard Fornas, now co-CEO of the Richemont Group, punched his ticket to the Watch Hall of Fame by putting his

expertise: the design, the marketing, the advertising, the distribution, the new (female) target customer. Not to mention the impact on its core (male) customer. The risks are enormous; so much can go wrong. But should you pull it off, the rewards are phenomenal. Ask Philippe Stern, now honorary chairman of Patek Philippe. To many, the notion that the world's most prestigious producer and purveyor of haute horlogerie watches would churn out steel quartz watches for women was heresy. Amidst howls of execration from his collector clientele, Stern rolled the dice on the Twenty-4 ladies' watch in 1999 and created a huge new revenue stream for the company.

Not one to miss a trick, the late Nicolas G. Hayek Sr. decided to do the same thing at Breguet. The designs for the firm's first ladies' collection, Reine de Naples, created a civil war inside the company. The traditionalists were aghast at the ornate, gem-encrusted jewelry watches proposed and robustly let the boss know he had lost his mind – er, way. Hayek quelled the uprising, produced the collection (they are mechanical, not quartz), and opened a new front for Breguet across the gender divide.

That's why the sirens are so alluring. It works both ways, of course. Was Karl-Friedrich Scheufele, co-CEO with his sister at Chopard, satisfied leading one of the industry's most successful women's watch companies, famed for its Happy Diamonds collection? Of course not. With the luxury mechanical men's market taking off, he developed the L.U.C mechanical movement in 1996 and put his "ladies'" brand on men's mechanicals with in-house movements.

Now sailing across the divide is Journe. He admits he had some hesitation about it. But his friend and fellow Frenchman, Richard Mille, reassured him: "Don't worry about making a quartz watch for women," Mille told the mechanical maestro. "You are Journe!" ○



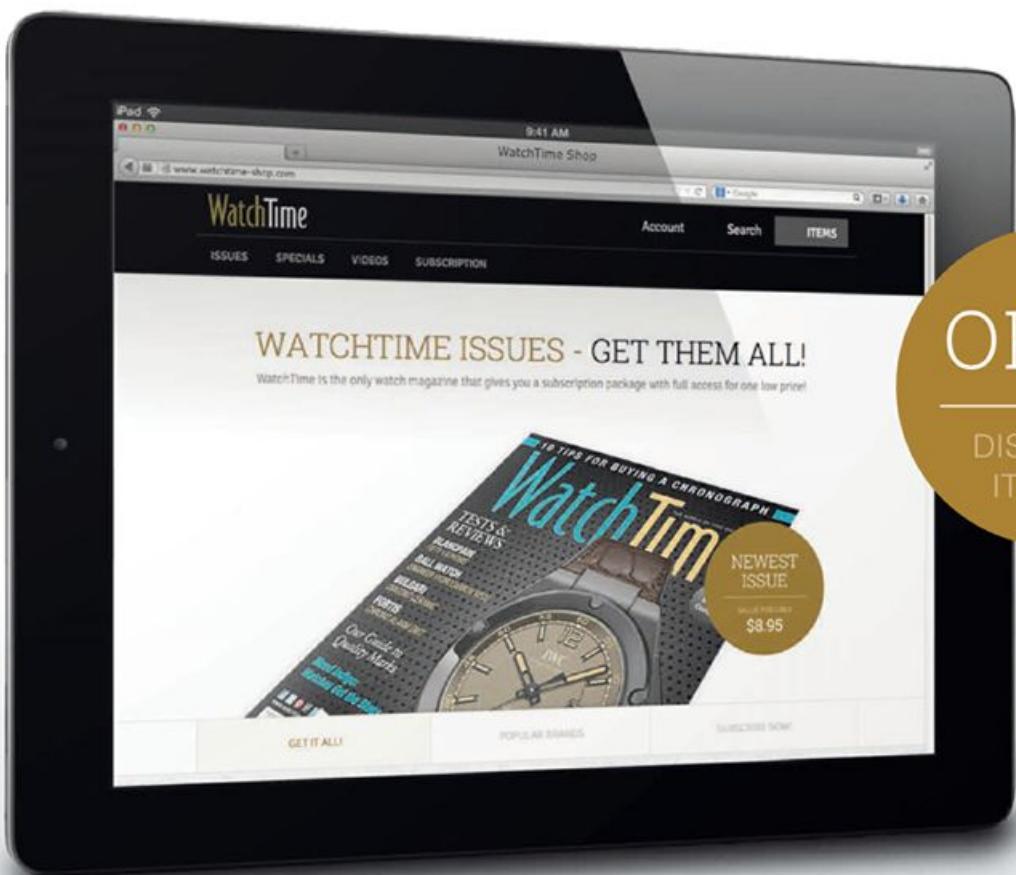
François-Paul Journe

money on the Ballon Bleu. He hit the jackpot by getting men and women to buy and wear the same watch: that's double the pleasure, double the fun, and double the revenue of a standard men's or ladies' watch.

Almost as difficult is for a long-established guy brand to make a commercially successful gal's watch. For a men's brand, everything about the development of a women's watch is outside its area of

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